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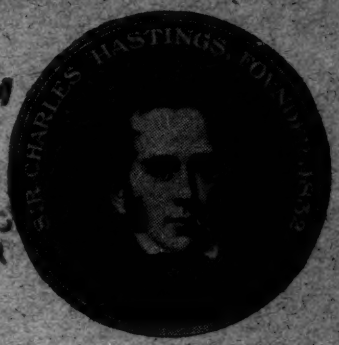

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Remarks
ON
"COLDS" AND THE INFLUENCE OF THE ATMOSPHERE ON THE NASAL MUCOUS MEMBRANE.

BY LEONARD HILL, M.B., F.R.S.,
DIRECTOR OF THE DEPARTMENT OF PHYSIOLOGY, MEDICAL RESEARCH COMMITTEE.

EPIDEMICS of "colds" are most common when the humidity of the atmosphere is great, and the temperature variable but on the whole cool—when the weather is raw with thawing snow, or strong winds blow charged with cold rain, and the ground is wet and cold. Cold dry weather and strong drying winds do not favour these epidemics. Men living open-air lives are free from "cold" whatever exposure to extremes of weather they undergo—for example, sailors on long voyages, arctic travellers, troops at the front. The health of the navy at sea in war is better than in peace; the sailors are far less exposed to temptation to over-indulge, and to infections from the civilian population in port. Shackleton in his antarctic expedition recorded a single outbreak of "cold" after the opening of a bale of clothes packed in London. Men taken from shop or office, turned into soldiers, and put under canvas, escape the "colds" from which they suffered in civil life. When children after the holidays return to school, epidemics of "cold" usually begin to run through the community. In the holidays they may paddle all day in the sea, bare-legged, exposed to far greater cooling than at school, but they do not suffer from "colds" then. The "colds" begin when the weather confines them in shut-up and artificially warmed schoolrooms and places of assembly. The latter are the happy hunting ground of the infecting microbe, which does its work while the little innocents raise their voice in the morning hymn. A certain propinquity is required in order that the infected saliva spray sneezed, coughed, or spoken out, may be carried from a "carrier" to another victim. Out of doors folk do not crowd so closely, and the ventilation is very much greater; the saliva spray is blown away, and the infection cannot be massive, as it may be indoors or in railway carriages, where the atmosphere is comparatively still.

But this is not the whole story. Why do certain weather conditions cause epidemics to sweep through the communities of our cities? Why are those who live an outdoor life relatively immune—hardened—both to weather conditions and infection? What is the nature of the hardening process set up by exposure to weather and cold baths? In spite of the popular opinion to the contrary, it is clear that exposure, even to extremes of cold, by itself does not occasion "colds" or pneumonia. Shipwrecked folk, exposed almost to that point of chilling which stops the vital functions, do not after rescue suffer from coryza or pneumonia; neither do the troops exposed to the severest hardship in the waterlogged trenches. "Trench foot" seems to be the combined result of local chilling and waterlogging of the skin. Dry cold can be withstood very well, or prolonged exposure to salt sea water. In the case of trench foot it is the osmotic conditions of the tissues which are upset by the insoaking of rain water into the chilled skin, while the tissues are poisoned by the products of bacteria which multiply within the confinement of the boot and stocking. A local damage thus results from prolonged and extreme exposure to wet and cold. On the other hand, the troops so exposed are singularly free from pneumonia, "colds," and epidemics of the influenza type.

The domestic animals—cow, pig, horse—with a relatively scanty covering of fur, not only withstand, but thrive on, continued exposure to wintry weather in the fields, or in cold, draughty byres. Stock raisers know that artificial means of heating cannot be used with success. Fowls will not thrive in artificially heated pens. The incubator chick is not so robust as the one hatched by the hen. So is it with the child coddled in heated rooms at home and at school.

Acute rhinitis or coryza, the common cold, may be caused by bacterial infection; by dust—for example, cycling in the dust of motor cars; by a chemical irritant—for example, sulphurous acid from furnaces; the poison gas cloud of chlorine suffocates by causing the outflow of fluid in the air passages; by the pollen of certain grasses. There is also a class of people who suffer from a nervous derangement of the nasal membrane, from vasomotor rhinitis or paroxysmal rhinorrhoea as it is called. The nasal reflexes of such people are unduly excitable—hyperaemic patches may sometimes be seen on their nasal mucous membrane. Sudden changes of atmosphere—a draught—may provoke in these an acute paroxysm. These people are pathological, hypersensitive, but it is probable that their noses have a great influence on the habits of the nation. The laity do not distinguish causes. It is manifest that some people are acutely affected by draughts, and therefore draught becomes popularly considered the chief cause of "colds." Nursery and family tradition rules habits, and tradition is usually at least half a century behind science. Science may beat against the door but tradition holds it fast.

It is generally believed that more nasal catarrhs are contracted through cold feet than in any other way, and yet soldiers whose feet are chilled to the local death of tissues do not have "colds" in the head therefrom. Under what conditions does chilling of the feet inflict punishment on the nasal membrane? and how is it influenced by conditions of humidity and draught? These are questions which are well worthy of inquiry, but little attention do they seem to have received so far.

F. F. Muecke and the writer[1] drew attention nearly three years ago to the appearance of the nasal mucous membrane when the subject is exposed first to outdoor conditions, and secondly to those conditions of heating and ventilation which are not uncommon in rooms. Out of doors the wind moves at a much greater velocity at head than at foot level, owing to friction of the moving air against the ground; the ground, too, is warmed by the sun. As a rule, then, excepting such unpleasant conditions as pertain to thawing snow, the head is cooled at a greater rate than the feet. Cool breezes blowing round the head, the radiant heat of the sun, and a warm ground to stand on, are the ideal outdoor conditions. The healthy mucous membrane of the nose, examined by aid of a speculum, under these conditions appears pale and taut. If touched with a probe it does not pit, and there is no thick secretion upon it. Indoors, in those conditions which are unfortunately only too common, when the feet are chilled by draught blowing over a cold floor, and the head is immersed in warm stagnant air, the nasal membrane appears swollen, congested, and covered with thick secretion. A probe pushed into the swollen membrane forms a pit, showing how boggy it is, and the airway is so diminished that a person with a spur of bone or any kind of obstruction cannot breathe through the affected nostril. Warming the feet at a fire at once relieves the congestion and does away with the obstruction, so that the airway again becomes free. It is this congestion and swelling of the nasal membrane, and no doubt also of that of the air sinuses opening into the nose, which largely causes the feelings of stuffiness in the head and headache felt in crowded, overheated places of assembly. This headache is generally, but erroneously, attributed to the absorption of chemical poisons supposed to be present in the stuffy air.

In the chamber of the House of Commons the ventilating current is driven up through the floor in such a way as to cool the members' feet, while their heads are exposed to more stagnant air. Cold feet and stuffy heads result—just the wrong conditions for legislators. The thermometer, it is true, shows a uniform temperature of 63° F.; but the katathermometer,[2] an instrument invented by the writer for measuring rate of cooling at body temperature, shows that the members' feet are cooled at a rate which is 50 per cent. or more greater than the cooling of their heads. The writer has his left nostril obstructed by a deflected septum. Sitting on a bench in the House of Commons he found his left nostril became completely obstructed in the course of a very few minutes. During the inquiry of the Ventilation Committee of the House of Commons he was allowed to make experimental alterations in the system of the ventilation in one part of the chamber; closing up the floor inlets there, he introduced air at the Gallery level. Under these conditions his feet were warm, his head agreeably cooled by a slight and grateful movement of the air, and his nasal airway unobstructed. Changing to and fro, from the part ventilated on the old system to that

ventilated by the new, his left nasal airway each time became obstructed by the old, opened by the new.

An easy and striking way of demonstrating the change in the nose is to install in a small shut-up room a gas fire fitted with no flue, so that all the heated air escapes into the room and rises into the upper part. Then with the aid of mirror and speculum examine the noses of, say, half a dozen subjects who first have been in the open air, secondly have been for some minutes in the room. A properly flued gas fire, which warms the floor and feet by radiant energy, will of course put the nose again into good condition. Toasting the feet at such a fire immediately relieves the nasal congestion and opens the airway.

Cold feet *per se* do not have this effect on the nose. The writer has observed in himself, when walking in melting snow or cycling in a cold wind along snow-covered roads, that his feet may be most uncomfortably cold, but his left nasal airway is wide open. His head, under these outdoor conditions, blown upon by the cold wind, has been as cold as his feet. It is the indoor conditions of cold draughty floor and warm stagnant air round the head which produce the congestion, swelling, etc., of the nose. These are conditions entirely opposed to the natural conditions out of doors.

A leg put into warm water responds by local vaso-dilatation; a leg put into cold water becomes pale with constriction and may even shiver, while the rest of the body is warm and keeps quiet. Out of doors the cold air is inhaled, and the naked face more than any part feels the cooling effect of the wind. The nose then is made taut—constricted—even though the feet be cold. Indoors, when the feet on a draughty cold floor are chilled and constricted, and the head is in a bath of warm stagnant air, the nose becomes congested, both by the local effect of the warm air and also by the blood, which is determined to all dilated parts from the cold-constricted feet. Warming the feet, therefore, at once lessens the congestion of the nose and opens the airway.

The ideal method of warming and ventilating rooms would give us abundant radiant heat, a warm floor, and agreeable movement of cool air. Such conditions are found in one-storied foundries where the roof openings are designed of ample size. The health of men engaged in foundries is very good. The Roman hypocaust gave a warm floor, and with unglazed openings must have secured warm feet and cool heads.

Open fires, and properly flued modern gas fires, give us radiant heat, and a warm floor within the range of this heat. We can toast the feet at these, and much of the hot air goes up the chimney. The so-called radiators, gas or steam, and artificial lights, together with the heat and moisture from the bodies of people, make warm and humid the upper strata of rooms, and afford the conditions bad for the nose.

Suppose the nasal membrane has become swollen, congested, and covered with thick secretion in these bad conditions, and the subjects go outside again into the cold air; then the membrane at once becomes pale, owing to vaso-constriction, but for some little time it remains swollen and boggy, pitting on the touch of the probe. I believe that these conditions of the nasal membrane have a great deal to do with the "catching of colds." In crowded rooms infection takes place from mucous spray, sneezed, coughed, or spluttered out in speaking. The inhaled bacteria will be caught by the swollen mucous membrane covered with thick secretion. In cold outside air not only is the membrane kept taut, but the flow of blood through it is rapid, for the inhaled air has to be warmed up and moisture rapidly evaporated from the membrane so as to saturate this air at body temperature. Thus more lymph comes out into the membrane from the blood vessels, and this contains the immunizing substances. The offensive bacteria are washed away or destroyed and thus kept out. On the other hand, in the condition where the membrane is covered with thick secretion, congested and boggy, there is a medium more suitable for the bacteria to settle and grow on, for it is boggy and stagnant, not flooded with fresh lymph, particularly when vaso-constriction takes place on passing from an over-hot, moist atmosphere into the wintry outside air.

The washing away of bacteria by the outflow of secretion must be one of the most important methods of defence. In the alimentary canal poisonous concentrations of substances—for example, sugar—are diluted and kept away from the living membrane by the secretion of mucus. In the respiratory tract fluid is poured out to dilute and wash away a chemical irritant such as chlorine. Now the rate of evaporation from the nasal membrane must be of first importance in promoting the outflow of lymph through it, and the factors which determine this are worth considering.

At 30° F. air saturated with water vapour holds 1.9 grains per cubic foot. At body temperature the saturated air holds no less than 19 grains. Exhaled air is warmed up to, and saturated at, body temperature, and a cubic foot of air is breathed by a resting man in about four minutes. Thus the nasal membrane, if it saturate air inhaled at 30° F., will evaporate 19−1.9=17.1 grains of water (about 1 c.cm.) every four minutes. If the man is taking exercise the nose will evaporate this amount every minute, or even every half-minute, owing to the increased respiration. This means that two or three ounces may be evaporated from the nasal membrane in the course of an hour's exercise on a wintry day.

The argument so far has taken it for granted that the nose does it all—it may not; when exercise is taken other parts of the airway may share in the evaporation and beneficent outpouring of lymph.

Now let us turn to the atmosphere in spinning mills or weaving sheds saturated, say, at 75° F. Such air holds 9.4 grains per cubic foot, and to saturate it the nose will only evaporate 9.6 grains a minute—a little more than half the above amount of water. I will set out the figures for the whole range of temperatures from 30° to 90° F.

TABLE I.—*Amount of Water in Air Saturated at Various Temperatures.*

Air saturated at	30° F.	holds	1.9	gr.	per cub. ft.
,, ,,	40° F.	,,	2.8	,,	,,
,, ,,	50° F.	,,	4.1	,,	,,
,, ,,	60° F.	,,	5.7	,,	,,
,, ,,	70° F.	,,	8.0	,,	,,
,, ,,	80° F.	,,	10.9	,,	,,
,, ,,	90° F.	,,	14.8	,,	,,

Air saturated at body temperature holds 19.0 gr. per cub. ft.

It is of course the rapid increase in the containing power of the air, as the temperature rises, which enables us to keep our bodies cool, by sweating, in saturated atmospheres when the temperature is even 80° to 90° F. There is a big difference between 10.9 at 80° and 19 at body temperature, and on this the tolerance of humid tropical conditions depends.

Under ordinary indoor conditions, with a temperature of about 60° dry and 55° wet bulb, there will be about 4 grains of water vapour in each cubic foot of air; at 30° F. there is 1.9 grains. We see, then, that the difference between the evaporation from the nose on passing from wintry air to the indoor conditions is about 12 per cent.—17 grains per minute in the one case, 15 in the other. In the spinning mill at 75° F. (saturated) the evaporation is about 42 per cent. less than out of doors on the wintry day.

The demands made on the circulatory and evaporative mechanisms of the nose are, then, great on changing suddenly from this warm atmosphere to the cold outdoor conditions. A much greater supply of blood is required to keep the nose warm, and a greater passage of lymph to keep up the evaporation in the cold outdoor air. No wonder sudden changes of conditions from over-hot, humid rooms to raw, wintry weather strain the vaso-motor and secretory mechanisms and help to cause "colds." No wonder, when "colds" are upon us, that it is advisable to keep to one uniform temperature and stay indoors—as we cannot very well stay out. These sudden changes are quite unnatural to the wild animal, but the dog shares them with civilized man. The dog, however, is another story—he is not, as a rule, crowded with his fellows indoors; he hardens himself by wearing no clothes, is less infected and more immune, like the man whose work is in the open air. Our feeling of comfort depends very closely on the effect of atmospheric conditions on our skin and nose. It is probable that we are sensitive to any change in the rate of evaporation from the nasal membrane. Humid air must check evaporation until the nasal membrane has warmed up the air and so made it capable of holding more moisture. This is particularly so in the case of mist or fog; the cold particles of water must first be evaporated before any evaporation from the membrane can take place. The cold particles also chill the nerve endings in the cold spots of the skin, while the moisture

adsorbed by the clothes lessens their heat-retaining properties. Hence our discomfort and the chilly effect of a fog. Relatively dry air, on the other hand, does not check evaporation or cool the nerve endings in the same uncomfortable way.

Miserable raw wet weather, wind-driven rain or sleet, impels us indoors, and makes us shut up windows and crowd in heated rooms. Exposure to infection is thus made greater while the inability to take open-air exercise in such weather may diminish the vigour of health, which depends so intimately on the rate of metabolism and the influence of exercise on the digestive organs. There is evidence that the prevalence of cases of cerebro-spinal fever is associated with cold, wet weather and the crowding of soldiers in the humid, confined atmosphere of huts and billets.[3] Under canvas the ventilation is far freer, and the atmospheric conditions favour evaporation from the nasal membrane and prevent its congestion. In stove-heated huts crowded with men, with damp clothes steaming, the temperature and humidity rise to heights which are quite impossible under canvas.

The effect of the cool outdoor air in promoting the flow of blood through the nasal membrane is no less noteworthy than that of evaporation. A greater blood flow is not only required to maintain the evaporation, but to keep the membrane at body temperature.

The specific heat of dry air at constant pressure, and 20° C. is 0.24—that is to say, 1 gram of air takes 0.24 small calorie to warm it up 1° C.; 1 gram of air has a volume of 778 c.cm. measured at normal pressure and temperature. To warm to body temperature each litre of air breathed, then, approximately 0.3 small calorie is required, that is for each degree centigrade through which it is warmed.

If the atmosphere is at freezing point, 11 small calories will be required for each litre breathed—say 77 small calories a minute for the resting man. At 65° F. this amount will become 38; at 75° F. only 26. At ordinary room temperature, then, only half the heat will be required to warm the air breathed as at freezing temperature.

Taking exercise out of doors on a cold winter day and breathing 40 litres per minute, a man may lose 4 to 5 large calories of heat per minute in warming the air he breathes, against 0.38 sitting in a room at 65° F. We see, then, how much more blood is required to keep the nose warm in the outdoor conditions.

Herein lies one explanation of the benefit of open-air exercise, sleeping in the open air, etc. The greater circulation through, and the greater evaporation from, the nose together increase its immunity to infection.

To test the views put forward above as to the circulation in, and evaporation from, the nasal membrane we have carried out some observations on the temperature of the nose and the fluid secreted by it, first indoors and then outdoors exposed to cold winds.

If the temperature within the nose is maintained almost at body temperature not only indoors but when the face is blown upon and cooled by strong wintry winds and cold air is breathed, it is clear that much more blood must then flow through the nasal membrane per minute. Now this is what is found to be the case in observations carried out on different days and on four subjects. The temperature was recorded by inserting a delicate flat-bulbed thermometer far up, so that the bulb lay below the inferior turbinate.

TABLE II.—*Temperature of Inside of Nose under Various Conditions.*

Subject.	Temperature within Nose.		Temp. on Roof.	Temp. Indoors.
	On Roof.	Indoors.		
L. H.	37° C.	35.5°-36° C.	10.4° C.*	15.9° C.
F.	34.5°	35°	,,	,,
W.	34.5°-35°	35°	10.1°	16.9°
B. M.	36°	35.5°-36°	2.2°†	16.3°
F.	37°	36°	,,	,,
L. H.	36°	36°-36.5°	,,	,,
B. M.	36°	35.5°-36°	,,	,,
L. H.	35°	35°	‡	16.2°
B. M.	35.5°	35.25°	‡	,,

* Strong cool wind. † Cold wind. ‡ Snowstorm, cold wind.

We conclude, then, that when out of doors a man has much more arterial blood flow through his nasal membrane per diem than when indoors in heated atmospheres.

It is a common observation that exposure to cold wind makes the eyes water and the nose run—signs of that flood of fluid which is poured out to keep exposed surfaces wet and warm.

The secretion from the nose was measured in a way which gives a rough but none the less trustworthy indication. We passed a weighed probe covered with absorbent cotton-wool up the nose, left it there for three minutes, and then weighed again. A number of such weighed probes were first made ready; then a probe was passed up the nose to mop up whatever secretion might be there; after this we waited three minutes and then the observation went forward, first for three minutes indoors, and then for three minutes outdoors on a roof exposed to the wind. The results obtained were as follows:

TABLE III.—*Amount of Nasal Secretion under Various Conditions.*

Subject.	Secretion taken up by Probe in Three Minutes.		Temperature Indoors.	Temperature Outdoors on Roof.
	Indoors.	Outdoors on Roof.		
F.	0.119 grm.	0.269 grm.	16.2°	2.2°; snow, cold wind.
W.	0.065 ,,	0.186 ,,	,,	,, ,,
L. H.	0.173 ,,	0.253 ,,	15.9°	10.1°; cold wind.
B. M. ...	0.065 ,,	0.208 ,,	,,	,, ,,
B. M. ...	0.10 ,,	0.252 ,,	16.3°	Snowstorm, cold wind.
L. H.	0.067 ,,	0.123 ,,	,,	,, ,,
B. M., right nostril	0.135 ,,	0.173 ,,	15.2°	Snowing, cold wind.
B. M., left nostril	0.029 ,,	0.286 ,,	,,	,, ,,

The last pair of observations on B. M. are of interest because the right tear duct was blocked and the right side of the nose "stuffed up" as the after-result of a "cold." We only put stress on the general sense of the figures, not on the actual amounts given as representing the secretion caught by the probe. We believe the increase out of doors was generally under-valued; in the case of W., for example, when exposed to cold wind, the secretion ran down the probe and dropped off its end—the wool had become too wet to absorb it. The internal structure of the nose is so arranged that the secretion mostly runs backwards into the pharynx when the head is held in the normal position, and it is only the anterior part which furnishes the secretion which runs to the tip of the nose and enforces the use of the handkerchief.

The above figures, then, confirm the theoretical views which have been set forward, and before laying down the pen we would point out that the conditions which we have discussed in regard to the nose no less pertain to wounds; the flow of lymph through, and evaporation from, the wound counteracts infection and hastens healing. A suitable dressing and ventilation are required to ensure the adequacy of lymph flow. The dressing must prevent premature closing of the wound by a scab. Sir Almroth Wright's salt treatment by osmotic force pulls out lymph with its immunizing properties, and the outflow washes away infecting bacteria. Now that the open-air treatment of wounds is extolled, the surgeon's attention may perhaps be directed to the problems of evaporation from, temperature of, and blood flow through wounds, in so far as these may be influenced, not only by dressing, but by the relative dryness, temperature, and movement of the atmosphere.

The writer is indebted to Dr. Benjamin Moore, F.R.S., for help in carrying out the measurements.

REFERENCES.

[1] *Lancet*, May 10th, 1913. [2] *Trans. Roy. Soc.*, B, 207, 1916, p. 183. [3] Arthur Compton, *Journal of the R.A.M.C.*, November, 1915.

UNDER the will of the late Mr. Lewis R. Ross, the University of Rochester, New York, has received a bequest of £140,000, to be used for the establishment of a department of dietetics in which research work on foods will be carried out.

"THE SOLDIER'S HEART" AND ITS RELATION TO THYROIDISM.

BY

SIR JAMES BARR, M.D., LL.D.

WHEN the Editor of the BRITISH MEDICAL JOURNAL accepted my offer to write on this subject I felt that it required some temerity to enter an arena where so many doughty champions had recently striven for mastery, and not one of them, in his own opinion, knocked out of the ring. I read all the letters and articles in the JOURNAL on their publication, and imbibed as little as I thought necessary. Unfortunately this has involved a second reading (a form of amusement which I do not much appreciate), in order to find out whether all the writers were dealing or intended to deal with the same cardiac affection, or whether each writer had a particular disease of his own to describe. However hazy the ideas of some of them may have been, I came to the conclusion that they all intended to deal with the old "irritable heart."

The contributions of Dr. Alexander Morison, and his references to the soldier's heart as part of a general state of nervous exhaustion are excellent so far as they go, but he does not carry us far enough, and is apt to leave us in that neurasthenic land of the destitute. On the other hand, I should like to employ to Sir James Mackenzie's article on "The Soldier's Heart" the language which he used to Sir James Kingston Fowler. It is "vague, immature, insisting on the immaterial, and neglecting entirely the essential." On causation he is not the only writer who flies to that resort for the destitute—microbes and their toxins—to explain all the ills to which flesh is heir. It is to be noted that there is not a single bacteriologist on whose evidence one would condemn the most harmless staphylococcus in support of this view; the reason, perhaps, is that bacteriologists have had a scientific training, which makes them less prone to jump to a conclusion than the clinician, who becomes very positive on the subjects which he least understands. The modern heart specialist often does not even consider an elementary knowledge of physics essential for his speciality.

It is well recognized that in diphtheria, in typhoid fever, and, in fact, in any case of prolonged high temperature, cloudy swelling of the myocardium, as well as of the liver cells, may occur. In rheumatic fever the myocardium is often involved, and this can readily be recognized two or three days before the appearance of any murmur by the delay in the transmission of the pulse wave. In the case of the irritable heart the sounds are short and sharp even when there is a murmur, and there is no delay in the pulse wave—the interval between the mitral first sound and the pulse at the wrist is barely appreciable. Influenza often gets the credit of causing heart mischief, but it usually seems to me more of the nature of a neurosis accompanied by pain than a myocardial infection. Moreover, the alcohol which is too frequently and too freely administered may have some share in the causation, especially in those cases in which there is dilatation. The heart's action is quickened, the sounds short and clear, and in these respects it differs from the myocardial condition in diphtheria.

Like the civilian the soldier is liable to all the varieties of heart disease, but what seems to me strange is that although almost any kind of heart, according to Sir James Mackenzie, is good enough for a recruit, a large number of recruits get bowled over with some functional disease of the heart even before they reach the trenches. So bad does this irritable heart seem to be for those who have passed the recruiting stage that Major Bradshaw goes so far as to say that they should be invalided out of the service. If this were an established order it would be a simple matter for any one who has no stomach for fighting to get released.

In all cases of irritable heart which I have seen there has been some enlargement of the two lateral lobes of the thyroid gland with increased function. I have also found that gland enlarged in a considerable number of cases of frost-bite, or to be fashionable I suppose I should say "trench feet"; and I hope to show some relation in the causation of these affections. I am well aware that the enlargement is not always very apparent. The thyroid gland is best examined with the patient lying on his back with his shoulders and head supported on a gentle incline from the waist upwards; the two lateral lobes can then be easily felt internal to and behind the sterno-mastoid muscles. If the patient raises his head, so as to make the muscles and fascia tense, the whole gland disappears as if by magic. There is usually some throbbing to be felt in the carotids, and possibly also in the arteries supplying the thyroid.

HYPERTHYROIDISM.

In a paper on the functions of the thyroid, the suprarenal, and pituitary glands,[1] I said:

> Exophthalmic goitre is now, I think, almost universally acknowledged to be due to excess of function of the thyroid gland. In the case of marked exophthalmos a large pulsating thyroid, tachycardia, general nervous trepidation—the patient in an apparent state of fright, emaciation, a moist skin with consequent lessened electric resistance—any fool can tell what is the matter; but there are an enormous number of cases of hyperthyroidism in which there is no exophthalmos, no apparent enlargement of the thyroid, and no pronounced nervous symptoms. However, in these cases an intelligent observer will readily detect a tendency to emotional and vasomotor disturbance, a warm moist skin, warm extremities, active capillary circulation, rather high venous pressure, rapid action of the heart and the rate easily increased by any mental excitement, the knee-jerks and all the deep reflexes increased, and slight muscular tremor may be appreciable. In all degrees of hyperthyroidism the urine may contain a slight amount of albumin, especially after getting up; this corresponds to the so-called albuminuria of adolescence, and is associated with deficient vasomotor tone and a lessened amount of fixed lime in the blood. The free lime in the blood may or may not be increased, but there is always an excessive excretion, except when there is a very small intake. In cases of hyperthyroidism there is a state of unstable equilibrium; the individual is sharp, alert, even vivacious, but easily exhausted both mentally and physically, and so incapable of sustained effort.
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> The causes of the thyroid taking on this over-action, beyond the necessities of the system, are still rather obscure. This over-action cannot have any necessary connexion with the condition of the water in goitrous districts, because the large fibro-cystic masses are associated with lessened function of the gland, though of course in many such cases there may have been a primary excess of function, and we know that many cases of exophthalmic goitre end in myxoedema. However this may be, many are of opinion that the cause is water-borne, and can be destroyed by boiling, but the proof adduced in support of this contention is far from conclusive.
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> We do know that the active principle of the gland contains iodine, and that excess of function of the thyroid is always associated with excess of iodine in the gland. I have seen two cases of exophthalmic goitre, including well-marked exophthalmos, produced by a prolonged use of tincture of iodine, and both cases were rapidly cured by stopping the iodine and placing them on a calcium mixture. There may be sources of iodine difficult to trace in individual cases, but in every case one should keep his faculties of observation alert, try to find out the cause, and remove it. In every case the urine should be examined for iodine, though it is not often found unless the patient has been taking an iodide. Many medical men will tell you that they prescribe iodine and thyroid in such cases with advantage, but upon what grounds I cannot say, unless it be a hair of the dog that bit you, or the homoeopathic doctrine that like cures like; in that case, the more infinitesimal the dose the better. It may, however, most likely be that in such men's minds there is a confusion between over-action and under-action, exophthalmic and fibro-cystic goitre.

In the textbook etiology of hyperthyroidism the common cause, the female sex, is absent, but some men are as emotional as women. In the latter the thyroid gland is usually active about the menstrual period and during the early months of pregnancy. In men the suprarenal gland is ordinarily the more active, but in neurasthenia and in some febrile affections, such as diphtheria and pneumonia, the adrenalin function may be inadequate, and thus the controlling influence over the vasomotor system is lessened. In war other assignable causes are in force, such as mental and physical strain, worry, anxiety, and fear, vicissitudes of climate and temperature, want of sufficient rest and sleep, too much meat and not sufficient milk and cheese, and too much tobacco.

No wonder that under such conditions which go to make up the life of the soldier we should get great vascular disturbance and increased function of the thyroid gland. In great dread of any impending catastrophe the heart makes its presence felt by thumping against the chest wall. Anticipation is worse than action. When it was pointed out to the Irishman that, from his description of his wound, the bullet must have passed straight through his heart, he replied, "In faith my heart was in my mouth at the time."

The intensity of the symptoms varies very much, according to the excess of function rather than the mere size of the gland. In the cases of "the soldier's heart" the subjective symptoms are referable to that organ, but any careful observer should notice many other indications of increased thyroidism. The cardiac beats in these cases are frequent, usually from 80 to 120 in the minute, and the number is greatly increased by any emotional disturbance. This quickened action is accompanied by a certain amount of palpitation.

The eyes are, as a rule, not very prominent, but the sclerotics are frequently more than usually visible. The skin is warm and moist, except in cold weather, but even when the hands are cold the head is warm and the face often flushed. The tongue is rather tremulous and often indented at the edges by the teeth, there is usually some muscular tremor, a certain amount of trepidation and abruptness in manner. There is great dissipation of heat, and consequently when the body is much exposed to cold and wet the extremities become very cold and the fingers often dead, especially the distal halves. When the blood pressure is low the fingers and hands may get livid or purple and somewhat swollen from the slow capillary circulation, but this can be remedied by hanging the hands down and exercising them so as to increase the velocity of the blood in the capillaries. The toes may be a little livid when the patient is lying down, but not when he is standing up, as in the latter position the velocity of the capillary circulation in the feet may be at least quadrupled—always provided that the arterioles have not been so contracted by the cold as to shut off the capillaries. This condition of the circulation renders these men particularly liable to frost-bite, or the modern trench feet.

There is another strongly predisposing cause, a deficiency of lime salts in the circulation. This arises from insufficient intake and the excessive output which accompanies hyperthyroidism. The soldier's rations, in my opinion, do not contain a sufficient amount of calcium—the milk is scarce and each man only gets about 2 oz. of cheese daily. Whenever there is severe muscular work there should always be a large intake of lime. In mountain climbing I always increase my own supply. When there is hard work there is no danger in taking too much; a certain proportion is not absorbed, and any excess in the circulation is quickly excreted. In cases of "the soldier's heart" we get, as Dr. Jamieson Hurry would say, a vicious circle; the deficiency of calcium salts in the blood is a contributory cause in the production of hyperthyroidism and frost-bite, and the excessive action of the thyroid leads to great calcium metabolism.

So far as we at present know, the presence of free calcium ions in the blood and tissues is necessary for effective muscular contraction. The calcium ions increase the force of the muscular contraction, but diminish the irritability of the muscle, and, according to Loeb, inhibit the rhythmical contraction of muscle fibres, which he thinks does not depend on lessened excitability, but on some chemical combination of the calcium ions in the muscle which renders its rhythmical contraction more difficult or impossible. Sydney Ringer, in association with Dudley Buxton, showed that the effects of the salts of sodium, potassium, and calcium on skeletal muscles were somewhat different from their effects on the heart. The contractibility of skeletal muscles perfused with normal saline solution lasts longer, but when exhausted there is greater delay in relaxation. The contractions are strengthened and the relaxation delayed by potassium salts. On the other hand, the lime salts accelerated both contraction and relaxation. Personally, I have usually found that patients liable to cramp had a deficiency of lime in their blood, and thus the remainder contraction, so apt to occur in exhausted muscles, is not counteracted by a sufficiency of calcium. I still hold my former opinion that the calcium ions lessen the irritability of the heart muscle, and Blair Bell has shown that when a solution of calcium chloride was injected into the vein of a rabbit the rhythmical contraction continued, the amplitude of the contractions increased, but their frequency diminished, and when a poisonous dose was used the heart finally stopped in systole.

The late Ralph Mines showed how cardiac contraction was due to a difference in electrical potential between the ions within and without the cells.

We have many reasons for believing that the excitation process in muscle can be dissociated from the contractile process, and it seems clear that the electric variation is a direct index of the excitation process, while the contraction is a sequence, usual, but not quite inevitable. Just as in nerve, excitation occurs (but no contraction), so in muscle excitation occurs; if the contractile mechanism is in order excitation is followed by contraction.

In an experiment which I witnessed in his laboratory it was seen that the electric variation preceded the contraction of both the auricle and the ventricle, and, whether the cause or not of the contraction, it began the sequence of events, and, therefore, could not be the result of the contraction. In every case of excessive muscular action there is a great waste of lime salts, hence the necessity of a large intake.

The blood pressure in hyperthyroidism is very variable and merits special consideration. There is lessened peripheral resistance, the viscosity of the blood is diminished owing largely to a deficiency of fixed lime, the arterioles are relaxed, and the capillary circulation is active and free, all of which tends to lower the arterial pressure—at least the diastolic pressure. On the other hand, the capillary and venous pressures rise, the supply of blood to the heart is great, the ventricular cavities are large, and the systolic output great. Therefore, the systolic pressure may be fairly high, but as the arteries are large and the peripheral resistance low, there is a great fall in the pressure gradient, with a relatively low diastolic pressure. This great difference between the systolic and diastolic pressures means an inefficient circulation; it is therefore important that vascular tone should be maintained, and it is for this reason that adrenalin plays an important part in the treatment. When there is a great disparity between the systolic and diastolic pressures, and more especially when the systolic is relatively high, we get longitudinal straining of the large arteries, and marked recoil of the heart. It is this recoil which causes the thumping of the heart against the chest wall which is of frequent occurrence in hyperthyroidism, and is especially marked when a runner comes to a standstill after a strenuous race. In free aortic regurgitation this recoil often shakes the bed on which the patient is lying. It is often noticeable after an extra glass of spirits when the body is in a warm atmosphere. I do not mean that the extra glass, which develops the palpitation, is the only one which works the mischief, but it is the final straw, and the amount of the previous load will depend on the strength of the liquor and the capacity of the individual. This is an early stage in the development of the German beer-drinker's heart, which eventually ends with great hypertrophy and dilatation. "The soldier's heart" seems to be giving as much trouble in Germany as in this country. Dr. Goldscheider, in an interesting address, concludes that "the war had brought into unflattering prominence the ignorance of the medical profession of a group of symptoms with which a very large proportion of the soldiers in the German army were invalided."

The victims of the "soldier's heart" are easily exhausted and get short of breath on slight exertion, but pain in the cardiac region is not a very prominent symptom unless the heart be dilated. When lying in bed the heart gives very little trouble, unless the patient is suddenly startled or quickly assumes the erect posture. These patients are liable to febrile attacks, but that forms no part of the cardiac trouble.

The large class of cases of hyperthyroidism covers much more than "the soldier's heart." When the cardiac phenomena are prominent the diagnosis seems to be fairly obvious, but if the heart does not come into prominence, which it often does not, then the cases are pushed into the neurasthenic class. When one of these patients sometime back from the front is asked what is the matter he blurts out "NEURASTHENIA," and at the same time looks startled. It is then time to point out that there is no object in having neurasthenia at present, as although in civil life the shocks to which he had been subjected would be sufficient to satisfy any jury that he was suffering from traumatic neurasthenia, yet the Workmen's Compensation Act does not apply. There is no railway company to attack, and it is somewhat doubtful whether there will be any pensions for neurasthenia, or even frost-bite. Moreover, a neurasthenic patient should not suffer from a

flushed face, hot head, excitable pulse, and a general appearance of fright.

I recently saw a marked case of hyperthyroidism most unjustifiably dubbed neurasthenia.

A lieutenant, aged 25, joined the army soon after the commencement of the war, very keen and anxious to excel. He had hard work training, and on one occasion fainted at drill. Again in London he fainted in the street, was seen by a doctor, who said that he had a large heart. After this he spent some time in a nursing home under a physician who does not seem to have given any diagnosis except that his heart was not enlarged. He then went for a course of training at Winchester, and finally was sent to France in November, 1915. He had rather strenuous work, and as a bombing officer his duties were chiefly at night; he was seldom in the trenches in the daytime except to see that the bombs were all right. He had no fear of shells or other missiles, but he could not bear to see a man on a stretcher; if any one fainted he was apt to do the same. About the middle of January he collapsed in the trench, was carried out and invalided home; a medical board in London recommended his discharge from the army as unfit for further service owing to neurasthenia. He did not feel inclined to take this verdict; he went to his regimental surgeon, who said that there was nothing the matter with him, and ordered him to his dépôt. It was soon found that he was not able to stand the fatigue of constant drill, and his commanding officer requested him to see me.

He gave me the impression of having a somewhat startled, not to say frightened, appearance. He complained of being easily exhausted, getting short of breath on exertion, often troubled with palpitation and throbbing in the vessels of the neck. He gave way at the knees, and felt that he would like to lean against a support; any extra exertion caused exhaustion, and on suddenly assuming the erect posture he felt faint. He perspired freely and usually felt warm, but often the ends of his fingers became pale and dead. His head usually felt hot, and he was often confused in his thoughts, and incapable of sustained mental effort. He was emotional, and often felt inclined to cry without any reason. There was slight general tremor, muscular irritability, and *tache* easily developed and very persistent. The knee-jerks were excessive. Heart 2 in. to the right, and 4½ in. to the left of the mesial line; sounds short and clear, no murmur, second pulmonic sound rather accentuated. Pulse 84 recumbent, on assuming the erect posture 120, afterwards falling to 96. Blood pressure: diastolic 110, systolic 150 mm. of mercury. Urine 1024, acid, a trace of albumin, lime deficient, phosphates normal; appetite bad. Height, 5 ft. 8½ in. Weight in shirt and trousers, 10 st. 11 lb.; he had lost some weight. I ordered him a month's rest, a liberal diet with plenty of milk food, and a mixture of adrenalin and lime salts.

In this class of cases there is not only over-action of the thyroid but under-action of the suprarenals. The patient often feels faint, and there may be sickness, and even vomiting; on quickly assuming the erect posture he may feel giddy, and there is a great increase in the frequency of the pulse, which becomes small and feeble owing to the blood gravitating into the abdominal cavity and the failure of the vasomotor mechanism to adjust its action rapidly to the altered conditions; and there is frequently orthostatic albuminuria. These phenomena have been aptly termed "cardio-splanchnic paresis" by Albert Abrams. In these cases an abdominal belt worn tightly does good.

HYPOTHYROIDISM.

In many cases of frost-bite, even when the thyroid gland is enlarged, its over-action has disappeared before the patient reaches this country, and frequently there is a state of hypothyroidism, with feeble circulation and cold blue extremities. These cases are easily treated. There are also cases of hypothyroidism in stolid men who would not move a hair if shells were bursting all round them. I had recently a friend under my care—a distinguished officer of a high and well-merited reputation, mentioned in dispatches and honoured by the King. After twelve months' strenuous work, want of rest, and not troubling about his food, he lost over 4 st. in weight. His condition was noticed by his superior officer, who advised him to take a rest. He did not think it necessary, but in obedience to the command he returned to London, was examined by a medical board, which gave him two months' leave.

When I saw him he chafed under the long enforced idleness, but I told him that two months were little enough. I ordered him to bed, told him that I would see him when I thought it necessary, that he was to put on at least 2 st. in weight, otherwise he would require a new uniform. About medicine and diet I would speak to his superior officer, and she would see that my instructions were carried out. Notwithstanding his great loss of weight I felt confident from his slow, feeble, intermittent pulse and other symptoms that there was deficient thyroid action, and among the remedies I ordered was a 5-grain thyroid tablet daily. He rapidly improved, gained over 2 st. in weight, and was soon fit for plenty of exercise. Before the two months were up he happened to be in London, and sought a medical board, the president of which told him that he could not pass him for foreign service. He then appealed to be examined by the junior member of the board who agreed with his senior. This seems to be a much more common custom in the army than in civil life. When I saw him he was annoyed, as he wanted to be back in the scene of action. I told him that it was his own fault, that he had thought himself too well and had stopped treatment. I had no doubt that his heart had astonished the examiners by intermitting a few times, and that had frightened them. There is an alderman in the city of Liverpool, aged 90, who can still do a long day's fishing and enjoy his dinner with the youngest of us, yet he has had an intermittent heart all his life and was several times rejected for life insurance. I told my friend that he was unfortunate in not having been examined by Sir James Mackenzie, because he might have told him that intermissions do not count, that he had an excellent heart for a recruit, and it might last him till the age of Methuselah if he did not die in the meantime. My own opinion was that his heart was good for this war and someway on to the next if he did not get in the way of a shell. I told him that he should be like a medical student who always studies the idiosyncrasies of his examiners when going up for an examination. I told him to resume his 5-grain thyroid tablets, to take one every day of his life, and it would save him many medical prescriptions and keep him out of the hands of the modern heart specialist; but for a week before his next medical board he was to take a tablet night and morning and stop tobacco. In the meantime he should go off to Scotland and get some shooting. In a few weeks he passed another medical board, he told me, with flying colours.

I wish to take this opportunity of pointing out that there are large amounts of thyroid preparations on the market more or less useless. It is unfortunate that we should be so much dependent on the reputation of the druggists—wholesale and retail—for the quality of our drugs. Thyroid preparations should contain at least 0.2 per cent. of iodine, but in many samples I have failed to find a trace. Of course, it is easy enough to add iodine to the preparation, but whether the added iodine is as effective as that which should be naturally in the gland is another question. However, I often find that the effects of thyroid are enhanced by the use of iodine at the same time. A favourite prescription with me is a mixture of calcium iodide, tincture of iodine, and the syrup of lactophosphate of lime.

The treatment of these cases is that of hyperthyroidism and hypothyroidism, which every one should know. I see Dr. Florence Stoney strongly recommends *x* rays in cases of hyperthyroidism. I used the *x* rays in many cases with some benefit ten years or more ago, but latterly I have not done so, as all my cases have done very well without the rays. I have no objection to their use, but I think caution should be exercised for fear of overshooting the mark.

REFERENCE.
[1] *Practitioner*, April, 1914.

THE report of Major-General William C. Gorgas, Surgeon-General of the United States Army, to the Secretary of War shows that the admission-rate for sickness for the whole army in 1914 was 660 per 1,000, the lowest on record. The rate was highest in China and Panama and lowest in Alaska. The rate for discharge for disability for the entire army was 12.99, as compared with 12.77 in 1913. The death-rate was 4.40, as compared with 5.15 in 1913. Among the 98,649 men stationed in the United States, Alaska, the Philippines, Hawaii, Panama, Porto Rico, and China, there were but 7 cases of typhoid fever; only 2 had received the complete course of vaccine treatment. The admission-rate for tuberculosis had receded to 3.50, and for alcoholism 13.64, both the lowest ever recorded. The rate for malarial fevers was 29.48, said to be "a very creditable showing." The Act of Congress stopping the pay of men incapacitated for service by venereal diseases had held them in check, though the rate was slightly higher than that for 1913.

CLINICAL NOTES ON PENETRATING WOUNDS OF THE ABDOMEN.*

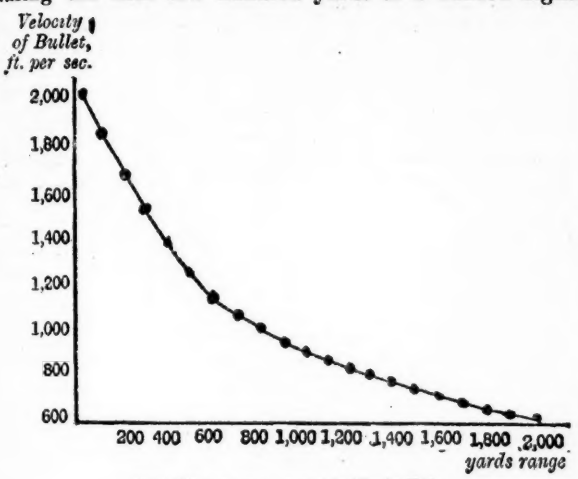
BY

H. H. SAMPSON, F.R.C.S., LIEUTENANT R.A.M.C.

I PROPOSE to mention some points in connexion with wounds of the abdomen and to read notes on some cases which have been treated recently at the special hospital at —— (5 kilometres behind the firing line).

The extent of the visceral injury caused by a rifle bullet in the abdomen depends to a large extent on the distance which the bullet has travelled before impact. The most extensive wounds are caused when the range is less than 500 yards. Intestine may be torn completely across or show large open wounds with everted edges. Solid organs present radiating lacerations. These wounds, besides being extensive, bleed profusely. With a range of over 500 yards, however, the wounds are more limited in extent, but still bleed freely. As the range lengthens the damage becomes more confined to the actual track of the bullet.

It is interesting to consider the cause of this influence of range on the character of the wound. At first I thought it was due to instability of the bullet which is known to exist during the first portion of its flight. The diagram shows by means of a curve the relation between velocity and range. It shows how rapidly the velocity diminishes during the first few hundred yards of a bullet's flight.



Velocity range curve of rifle bullet.

I think high velocity is the cause of the extensive character of visceral wounds at short ranges. The term "velocity" is meant to include both the translation and the spin of the bullet, and it is probably the latter which is the more destructive force.

The importance of primary haemorrhage lies in the fact that there is little tendency towards spontaneous arrest. When seen, three or four hours after receipt of the injury, small arteries in the wounded bowel are still spurting vigorously. In fatal cases death is almost invariably due to primary haemorrhage. It becomes obvious, therefore, that on this account alone every effort should be made to convey abdominal wounds with the least possible delay to a place which is equipped for their operative treatment.

Peritoneal Perforation without Visceral Injury.

Apart from those cases in which a bullet has only a short intraperitoneal course, it is possible for a bullet to traverse the peritoneal cavity in an area occupied by intestines without causing perforation of the viscera with which it must come in contact. One such case has passed through the hospital.

CASE I.

The entrance wound was in the mid-Poupart line, just below the level of the umbilicus. The exit wound was behind in a corresponding position.

When seen, two and a half hours after the injury, signs of internal haemorrhage were present; the abdomen was rigid and tender. Operation revealed intraperitoneal haemorrhage, which was proceeding from torn ileo-colic vessels adjacent to the caecum, but there was no perforation of any viscus. No sign of abrasion or bruising could be discovered in the small intestine. Bleeding points were ligatured. Recovery was uneventful.

This case is unique in my experience.

Wounds with a very short intraperitoneal course may implicate omentum only. In these cases the omentum shows a great tendency to prolapse through the wound. If the injured omentum is excised and the peritoneum closed, these cases do uniformly well. There is apparently little danger of suppuration occurring in the peritoneal cavity, although the rest of the wound may be badly infected.

Peritoneal Perforation with Visceral Injury.

Wounds of the small intestine are generally multiple, but are usually confined to one segment of bowel.

CASE II.

Cpl. H., of the S. Staffs Regiment, was hit in the abdomen at about 250 yards range. He made the interesting statement that he felt no impact. His right leg suddenly became useless and he fell to the ground. About ten seconds later he experienced agonizing pain in the abdomen. This continued without remission until operation was performed. He arrived at the special hospital within one hour of being hit. The abdomen was then rigid. There was a small entrance wound in the middle line below the umbilicus, and an exit wound, about the size of a halfpenny, in the right buttock.

At the operation seven perforations were found in small intestine. There was a large quantity of free blood in the peritoneal cavity. A segment of lower ileum, measuring 24 in. in length, and containing all the perforations, was excised. End-to-end anastomosis was performed. The peritoneum was mopped dry and then closed without drainage. There was some vomiting for three days, but the patient rallied well. A letter from England six weeks after the injury informs us that he is walking about and feeling quite fit.

Another case of uncomplicated small intestine injury:

CASE III.

Pte. R., Northumberland Fusiliers, was hit by a bullet which ricochetted off an iron roof in the front line trenches. He described the impact as a blow without any pain.

This patient arrived at the hospital in a little over an hour from the time he was wounded. There was a large entrance wound, with bruised edges in the anterior abdominal wall, below and to the left of the umbilicus. At the operation this wound was excised and converted into a vertical incision. A distorted bullet was found lying free in the peritoneal cavity, adjacent to four perforations in small intestine. Intraperitoneal haemorrhage was small in amount; 3 ft. 2 in. of ileum was excised, and end-to end anastomosis performed. Portions of clothing were found scattered throughout the peritoneal cavity, mostly adhering to omentum. After irrigation with eusol and saline the abdomen was closed without drainage. Some infection of the abdominal wall occurred. This remained local and quickly subsided. The clinical chart indicates the progress. Five weeks after the injury this patient wrote from England to say that he was walking about, but still felt a little weak.

It is surprising how frequently injury to small intestine is complicated by injury to the iliac veins or inferior vena cava. The large arteries either escape damage or more probably produce a fatal result before the patient can be moved; on the other hand, injury to the great veins is often found. This additional source of haemorrhage has in my experience always led to a fatal result.

Wounds of the colon are often complicated by injuries to other viscera. These cases show a high mortality. If, however, the injury is confined to the colon, the outlook is more hopeful provided that operation is performed before widespread peritoneal infection has occurred. The lax wall of the colon allows instant escape of contents, in direct contrast to the small intestine, in which there is little tendency for leakage to occur for several hours.

CASE IV.

Lieut. I. was operated on within one hour of being hit in the left flank. The bullet which caused this wound had travelled more than a thousand yards.

The visceral haemorrhage was slight. There was a single linear wound of the descending colon, with faecal contents soiling the surrounding peritoneum. A Paul's tube was tied into the colon. Rubber drainage tubes were inserted into the subphrenic and iliac regions. Peritonitis remained local and a good recovery ensued. Preparations are now being made in England for closure of the artificial anus.

CASE V.

Lance-Cpl. E. Two and a half hours elapsed between injury and operation.

The descending colon was almost completely severed. There was profuse internal haemorrhage. Division of the colon was

*A paper read before the 3rd Corps Medical Society on March 4th.

completed. A Paul's tube was inserted into each end. A suprapubic drain was used in this case. Recovery was rapid and uneventful.

CASE VI.

The case of Private T., Suffolk Regiment, was complicated by the fact that the bullet had entered the abdomen through the innominate bone. There were six perforations of the caecum and ascending colon, varying in size and mostly caused by fragments of bone. The edge of the liver was lacerated, two pieces being completely detached. The edges of the caecal wounds were trimmed, sutured, and invaginated. A drain was inserted into the right flank. The exit wound through the anterior abdominal wall was filled with gauze, which passed down to the wounded liver. A few hours later, during an attack of vomiting, the patient felt something give way. Examination revealed the transverse colon and omentum lying in the dressings. The prolapse was reduced under an anaesthetic. The anterior wound was then completely stitched.

In spite of this unfortunate event the patient made a good recovery. No leakage occurred from the caecum. He wrote the following from Calais three weeks after the injury:

Dear Sir,—I am pleased to be able to write you to say I am getting on quite well, and know you will be pleased to hear this, for I think you thought I'd have a rough journey to pull through. Well, I thought I might with luck, but I was bad for two weeks. . . .

Wounds of the stomach bleed freely, but, if uncomplicated, respond well to operative treatment.

CASE VII.

Corporal D. J., Yorks and Lancs Regiment, was struck in the back by a small fragment of shell. He arrived at hospital two and a half hours after receipt of the injury.

There was a small entrance wound over the left erector spinae at about the level of the first lumbar vertebra. The abdomen was rigid and tender. He had vomited once. Operation revealed perforations of both anterior and posterior walls of the stomach. two perforations of the jejunum close to the duodeno-jejunal flexure, and perforation of the thin anterior edge of the liver. The shell fragment was found imbedded in the diaphragm beneath the left costal margin. The visceral wounds were trimmed, sutured, and invaginated. The only drain used was a wick of gauze down to the wounded liver.

Recovery was uneventful. A message from Calais states that the wounds are healed and the patient well.

Wounds of the Solid Organs.

Wounds of the liver give the best results. In simple perforations haemorrhage is slight; bile drains away for a few days; recovery is the rule. A bullet at short range will split open the liver as though with a knife. In such cases haemorrhage is free, but is easily controlled at operation. Extensive necrosis of the neighbouring liver substance sometimes occurs. This is often seen in fatal cases.

The spleen is seldom injured alone. Its injury is often associated with that of the left kidney, pleura, and lung. The following are the notes of such a case:

CASE VIII.

Rifleman T., 11th Rifle Brigade, felt a sudden blow in the abdomen while lying behind a cart in front of our wire. He arrived in hospital about five hours later, and was then blanched, cold, and collapsed.

There were signs of intraperitoneal haemorrhage. There was an entrance wound in the side over the left lower ribs. On opening the abdomen the peritoneum was found to contain a large quantity of free blood. The spleen and left kidney both showed lacerated perforations. The splenic pedicle was partially severed. The bullet track passed towards the muscles of the back to the left of the vertebral column. Profuse haemorrhage was taking place from the splenic pedicle and from the vertebral region. The spleen and left kidney were excised. The region of the spine was firmly packed, as no bleeding points could be seen. The bullet was not located.

The patient was now so collapsed that the operation was curtailed by simply filling the left loin with gauze and leaving open the centre of the abdominal incision.

Chest symptoms prevented further operative measures until the eleventh day, by which time infection of the loin had already occurred. Drainage tubes were inserted through a posterior counter opening. Eight ounces of sterile blood were aspirated from the left pleura. Signs of septic absorption still continued, and on the twenty-fifth day a rib was resected in order to drain the left pleura. No infection was established.

On the twenty-seventh day the lower posterior wound became faecal. The patient was now in an almost hopeless condition. All the wounds were infected. The temperature averaged 102° F. at night, 100° F. in the morning. The pulse-rate varied from 120 to 140. The respiration-rate varied from 26 to 40. Generalized bronchitis was present. Faeces were constantly escaping from the left loin.

The pleura was irrigated twice daily with eusol and saline. On the thirty-eighth day the temperature remained normal for twenty-four hours for the first time since the injury. From this point improvement was rapid and continuous.

A medical officer from Calais writes to say that the patient was transferred to England nine weeks after the operation, and that he was then in a very satisfactory condition.

It will be noticed that all the cases I quote have had a successful result, and I want to make it quite clear that such cases are looked on rather as brands plucked from the burning than the normal result of these injuries.

One point on which too much emphasis cannot be laid is the importance in these cases of operation at the earliest possible moment. To secure this end perfect co-operation is essential. At the special hospital the operating theatre is kept in constant readiness, and the operation is usually commenced within fifteen minutes of the patient's arrival. But, of course, the most difficult task lies with those responsible for the transference of the case from trench to hospital.

DISCUSSION.

Colonel SKINNER said he was particularly interested, more from an administrative point of view. The speed with which the cases were transferred from the trenches to the hospital greatly added to the chances of recovery. This speeding up rested with the medical officers. He had read Sir A. Bowlby's Bradshaw lecture, published in the BRITISH MEDICAL JOURNAL, where he pointed out the greater damage done by bullets when fired at shorter ranges, advancing the theory of compressed air in front of the bullet. Also that the bullet probably has an "explosive" effect. Frequently the bullet also turned over on its course. Its velocity must be imparted to surrounding structures; so much so that Sir A. Bowlby mentioned a case in which the bullet had travelled across the abdominal wall not entering the abdomen, but *post mortem* the bowel was found disorganized. In cases of wounds of back and buttock where the wounds might not suggest an abdominal injury it was wisest to send them into the abdominal and chest department of the field ambulance. He said that Mr. Sampson had had 60 per cent. of recoveries, including cases brought in moribund.

Captain FRASER said that it was often difficult to know when the peritoneum was opened. Recently he had found by experiment that if the blood pressure was low it was probable that the peritoneum was opened. As to injury due to the proximity of the wounded person to the discharged rifle, he described a case in which, accidentally, a soldier was shot through the abdomen at 250 yards without any extensive injury of the bowel. Probably the amount of injury depended a great deal on the position of the bowel when hit. He had tried various kinds of anaesthesia—spinal, ether, chloroform, and lately intravenous ether; here the results are good; not only was there an anaesthetic effect, but a volume of fluid given at once to replace the loss of blood.

Lieutenant-Colonel PICKARD said that he had read in the BRITISH MEDICAL JOURNAL a paper in which the damage done by a bullet penetrating the abdomen was regarded as analogous to the splash of a hard substance striking a fluid. He described the well-known trick of throwing a stone up in the air and into a pond trying to make the least amount of splash; here the splash was least when the stone dropped vertically.

Captain SOLTAU asked why Mr. Sampson used a Paul's tube in two of the colon cases and invaginated the wound in the other, and whether he had swabbed out with ether.

Captain MCNEE had examined livers pierced by bullets and noticed necrotic changes in the tissues at least two inches from the track. In one kidney case the bullet had pierced the upper pole, and the lower pole showed necrotic changes, although there was not any damage to the intervening tissue. In one 8 in. loop of small intestine he had seen one rosette wound and about nine linear slits; it was highly improbable that the bullet pierced through ten places. He suggested that possibly the slits were due to muscular action.

In reply to Colonel DUNN, Captain FRASER said that he did not use any elaborate apparatus for intravenous injections, only a Lane's bag.

Mr. SAMPSON said, in reply, that in doubtful cases of peritoneal entrance he opened up away from the wound to prevent sepsis. If the compressed air theory of causing damage to abdominal organs was correct more damage at the entrance wound would be expected. The Paul's tubes

were used in the two cases because two-thirds of the circumference of the colon was injured; in the other case the caecum had two or three small perforations. He had not used ether as a peritoneal dressing.

TWO CASES OF REMOVAL OF A BULLET FROM THE UPPER SURFACE OF THE DIAPHRAGM.

BY

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WHILST the lessons of war surgery have thrown much light on the immediate treatment of penetrating wounds of the chest and have prompted some most valuable additions to surgical literature, the later consequences of these injuries have received little notice.

It is a fortunate fact that not a few of these seriously wounded men recover, but some still carry in their chests the agent, whether shell or bullet, which caused the injury. These foreign bodies show a tendency to fall to the bottom of the thorax, coming to rest there on the upper surface of the diaphragm. In this position they may give rise to no trouble and no surgeon would suggest their removal. There are found, however, from time to time cases in which the foreign body is a cause of persistent and distressing symptoms.

In the first case which I report the man's life was made miserable by a constant "pricking" pain, and in the second case the soldier was quite incapable of any exertion, owing to the fact that an increase of respiratory movement beyond the normal produced at once a crippling amount of pain. The two cases are reported, not merely as examples of removal of foreign bodies from an unusual situation, but rather as instances of the help afforded to the surgeon by a simple method of "positive pressure anaesthesia." Thanks to this method, most ably handled by Major A. Wilson, the recovery of a bullet from the pleural cavity was carried out with perfect safety to the patient and was rendered, from the operator's point of view, little more than a minor surgical procedure. The details of the cases are as follows:

CASE I.

G. W. C., aged 24, was wounded in the right side of the chest by rifle bullet fired at long range. The bullet entered through the third right costal interspace three and a half inches from the middle line. Free haemoptysis occurred at once and continued in considerable quantity for twenty-four hours. He reached England at the end of five weeks, and during this time he had much pain in the lower part of the right chest, with frequent cough and daily haemoptysis. Although he stated, on admission to the 2nd Western General Hospital, that he had lost 2 st. in weight since his injury his general condition was excellent. The chest expanded well, and beyond a few moist sounds there was no physical sign of disease or injury. Cough was frequent, and the sputum always contained a little dark blood. The patient, though apparently well and comfortable in a sitting posture, was not able to lie down with ease, and was rendered very breathless by slight exertion. He complained constantly of a "pricking" pain, which he located deep to the sixth right costal cartilage.

Radiographic examination by Captain Bythell disclosed an intact rifle bullet lying on the upper surface of the diaphragm. The bullet was localized at a depth of two inches beneath a point marked over the sixth right costal cartilage and distant one half inch from the line of the right border of the sternum. As the pain continued after a month in hospital, and the patient's condition remained without change, save that the haemoptysis had ceased, it was decided to attempt the removal of the bullet.

Anaesthesia was induced by chloroform, and the tracheal catheter of the Ehrenfried's positive pressure apparatus having been introduced, the operation was carried out under ether vapour introduced under pressure by bellows. Through a curved skin incision the sixth and seventh right costal cartilages were exposed and denuded of their muscular and tendinous coverings, which were reflected downwards in one piece. A portion, 1½ in. in length, of each costal cartilage was then excised. The opening thus made gave abundant access, and through it the parietal pleura was incised in a horizontal direction. A healthy, well-inflated lung presented itself on opening the pleura. The lung appeared and felt absolutely normal, showing no trace of adhesions.

On packing off the lung with a strip of gauze there was disclosed at once on the upper surface of the diaphragm a rounded eminence, in size and shape like the half of a small walnut shell. An incision into this yielded a few drops of turbid fluid, and the bright, unbroken nose of the bullet at once presented. This was seized and extracted without difficulty; it was lying on the upper surface of the diaphragm, and had become covered and encysted by pale, friable fibrous tissue.

The gauze was removed and the parietal pleura closed tightly by a continuous stitch of fine chromic gut. The tendino-muscular flap was replaced by chromic gut sutures and the wound closed without drain. The colour and general condition of the patient were perfectly satisfactory throughout the operation.

Beyond a slight tracheitis, probably traumatic, which cleared up completely in three days, the convalescence was uninterrupted. The patient was discharged from hospital in four weeks. The "pricking" pain disappeared from the first and the man was able to move freely without breathlessness.

CASE II.

T. J. E., aged 21, was hit by a shrapnel ball at Suvla Bay. He stated that very free bleeding followed the injury—"blood running out of his mouth without cough." He gradually recovered, and does not appear to have suffered from any complications of the injury beyond occasional slight haemoptysis, which continued up to the time of his admission to the Manchester Royal Infirmary, six months after the injury. At this time the chest showed no abnormal physical signs and his general condition was excellent. The scar of the wound of entry lay over the inferior angle of the left scapula. The patient complained of much pain on exertion and located the pain at a point on the tenth left rib, a little in front of the mid-axillary line; he stated that the pain was very severe on deep breathing.

A radiogram by Captain Barclay showed an intact shrapnel bullet lying deep to the rib and fixed in the angle between the diaphragm and chest wall.

Anaesthesia was carried out, as in Case I, by Major A. Wilson with the help of Ehrenfried's apparatus. The operation was of the simplest nature. A portion of the tenth rib, about 1½ in. long, was resected and the pleura opened by a horizontal incision. The bullet was at once evident and was picked without effort off the upper surface of the diaphragm. The edge of the well-inflated lung was well seen, and as far as it could be inspected through the limited opening the lung appeared to be quite healthy and free. The pleura was closed with fine chromic gut.

The after-history of the case was quite without incident; the patient was discharged in a fortnight in excellent condition, having had neither haemoptysis nor his former pain since the operation.

TIME IN SURGERY.

BY

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THE priceless value of time in surgery is often overlooked, and fleeting opportunities of successful action are frequently allowed to pass with disastrous consequences. Again and again diagnosis is delayed or operation deferred until it is too late either to save life or to secure the best result. For instance, the early signs of grave abdominal diseases are too often attributed to trivial ailments, and a "wait and see" policy adopted until such irreparable damage is wrought that complete recovery is impossible. In such cases the greatest vigilance is required to determine the proper time to "look and see."

Two typical cases of appendicitis serve to illustrate these points. They were very similar in their early signs, but treated differently and attended by very different results.

CASE I.	CASE II.
(*a*) Diagnosis made within twelve hours.	(*a*) Diagnosis, abdominal influenza. After nine days, appendical abscess diagnosed.
(*b*) Operation within thirteen hours.	(*b*) Operation after ten days.
(*c*) Appendix removed, gangrenous, but not perforated.	(*c*) Large abscess opened. Appendix not found owing to the large size of abscess and the grave condition.
(*d*) General condition good.	(*d*) General condition very bad.
(*e*) Gridiron incision.	(*e*) Battle incision, as the surgeon thought he could get more room in this way.
(*f*) Abdomen closed.	(*f*) Drainage on and off for six months; then appendix removed at second operation. Drainage another two months.
(*g*) Patient up from fourth day; taken to the country on the ninth day. Quite well three weeks from operation.	(*g*) Patient up after ten months. Large gap in abdominal wall with hernia at the end of twelve months. General condition too bad for operation to reconstitute the abdominal wall at present.
(*h*) Patient has been in perfect health since the operation.	(*h*) Patient has suffered much pain and misery.

It ought to be more generally known that the mortality of operations for acute appendicitis increases rapidly with the delay. Operations carried out within twelve hours of the onset of an attack are not more risky than those undertaken in the quiescent period. Still, it is common for the surgeon to be asked to see patients for the first time about the third or fourth day, or even later, when abscess, peritonitis, or other serious complications have developed. Similarly, the mortality of rupture of the intestine is only 15 per cent. when an operation is undertaken within four hours, whereas it becomes 70 per cent. when the operation is delayed until after twelve hours.[1] Similarly, the mortality of perforated gastric ulcer when an operation is undertaken within twelve hours is only about 5 per cent., but as high as 60 per cent. when the operation is deferred until after twenty-four hours. The waste of time is almost as serious and even less excusable with chronic abdominal diseases such as cancer of the stomach or large bowel. For less than one-third of cases of cancer of the stomach when first seen by the surgeon is resection possible, and the result of procrastination is nearly as bad in cancer of the rectum.

Avoidance of Waste of Time at Operations.

Time is frequently wasted during operations. It is clear that in order to get good results the surgeon must do his operations well and thoroughly, but it is often forgotten that to get the best results he must also learn to do them quickly and without waste of time. On the other hand, he must never do shoddy work so that he may be quick. While always conscious of the time element, he must not keep one eye on the clock, but both eyes and all his faculties focussed on his task. His aim must be to get so skilful and familiar with his work that he becomes quick almost without knowing it.

It is obvious that the dangers of most operations increase with their duration. If an operation takes an hour when it can be just as well, or better, done in half that time, the disadvantage of the patient is serious. He has to take much more anaesthetic, which obviously adds to the dangers and discomforts still inseparable from anaesthetics. Further, manipulations and exposure are increased and prolonged with marked increase of shock, of post-operative discomfort, and danger of complications. These points do not need to be laboured, for they are evident enough to every one who has eyes to see. When an appendicectomy takes only ten minutes the patient is hardly ill or uncomfortable in any way, whereas if it takes an hour he is miserable and sore for days.

But the value of smart work is much more striking in grave crises such as operations for acute intestinal obstruction or late peritonitis. It is no exaggeration to say that in these cases the mortality multiplies with the time consumed at the operation. The following case illustrates the value of quick work.

Acute Intestinal Obstruction by a Band: Appendix Adherent to Caseous Mesenteric Gland.

A boy, aged 6 years, was seized with very violent pain in the abdomen on the morning of April 10th, 1911. His father gave him two large doses of castor oil, which failed to have the desired effect. He was admitted into Guy's Hospital with a subnormal temperature, blue, cold, and pulseless. The abdomen was considerably distended, but flaccid. It was full in the flanks, and there was a palpable swelling in the right iliac region. On admission at 8 a.m. he was too bad for operation, and was therefore infused into the axillae.

Operation.—The patient was given ether, and the abdomen was opened at 9 30 a.m. The lower part of the right rectus was displaced inwards. The peritoneum seemed to be purplish and clearly contained blood. It was opened, and a large amount of sanious fluid escaped, showing that the condition was one of intestinal obstruction and not appendicitis. Dark purplish, but not gangrenous, coils of small intestine were at once seen. Several coils were withdrawn, and a band was seen consisting of the appendix adherent to a caseous mesenteric gland. This was astride the lower end of the ileum, close to the caecum and completely obstructed it. The adhesion to the tip of the appendix was divided, and the empty caecum drawn away from its former position, which was unusually high. The abdomen was then closed with through-and-through salmon-gut sutures. The operation lasted seven minutes (the patient was only in the theatre ten minutes). He was not much worse at the end of the operation, but the infusion which was carried on throughout the operation was continued. Pituitary extract was injected in 5-minim doses. The patient rapidly recovered.

Our forefathers before the introduction of anaesthetics had no doubt about the value of rapid operating, but later a mischievous belief became common that, with anaesthesia, time did not matter. Unfortunately, there are still too many who appear to share this opinion. They waste valuable time—which belongs more to their patients than to them—in many different ways. It may be profitable to consider how to avoid some of this serious waste of time.

1. *By Making All Possible Preparations and Calculations Beforehand.*—The skin is always prepared before the patient comes to the operation table. All necessary instruments, ligatures, and sutures threaded on needles are ready for use before the patient is completely under the anaesthetic. The surgeon and his assistant are quite ready to begin as soon as the patient is satisfactorily under the anaesthetic. The surgeon thinks out the various steps of the operation beforehand as far as this is possible. He makes up his mind quickly what he wants to do, and does it without unnecessary delay.

2. *By Improving and Simplifying the Technique of the Operation in Every Possible Way.*—Here a sound knowledge of anatomy and surgery and constant practice are essential. As regards the knowledge of anatomy and surgery, it is assumed that the surgeon will not undertake an operation unless he is familiar with the anatomy of the part and the details of technique of the operation which he contemplates. It is clear from the results of some of the operations for hernia recently undertaken that the operators were not familiar with the anatomy of the inguinal canal, for several cases have come to my notice of recurrence within a few months owing to the inguinal canal never having been opened. It is true enough that a surgeon has to get practice to learn, but a sound knowledge of anatomy and surgery, together with diligent practice on the dead body, will carry the beginner far. Every one who wants to become a good and quick operator should practise on cloth all varieties of knots and sutures. In this way he will become expert and competent in a short time. It is often painful to see a man hesitating about his knots, and uncertain about his method of sewing. Many men waste time by making the skin wounds too small, and thus allowing themselves only an unsatisfactory view of the parts. As a rule, except on the exposed parts, such as the face, there is no object in making a small skin wound. Much time is also wasted in blunt dissection instead of clean cutting. Both of these faults not only waste time, but add to the shock and local damage. Good haemostasis saves much time. For instance, in most operations on the limbs a tourniquet is used, so that no bleeding occurs to obscure the view and delay the work. In other operations the main artery to the part is temporarily clamped or tied. For instance, the carotid is often clamped while operating on the neck. In most operations the important vessels can be secured before they are divided. Complicated instruments are to be avoided, for they waste time. For instance, a needle holder has no advantage in the majority of operations, but adds to the number of movements necessary for a given result. It is, of course, an invaluable and necessary instrument when working in a pit like the bottom of the pelvis. In ordinary work the finger and thumb are much more accurate, adaptable, and infinitely quicker. If one were to judge by the instruments they use, it might be concluded that some surgeons enjoyed making operations as difficult and prolonged as possible. The same may be said of many complicated methods, which are rarely as efficient as simpler ones. Continuous sutures save much time, and they are more effective and haemostatic than interrupted. In grave emergencies an excess of fine detail in sewing is often to be avoided; the sewing should fit the occasion. Lives may be lost through the waste of time involved by an over-refinement of technique.

3. *By Concentrating the Full Attention upon the Operation.*—This is not the time for considering and talking of other matters, nor even for explaining the various steps of the operation to the inquiring stranger. The latter must be content to watch until the operation is completed.

REFERENCE.
[1] *Lancet*, 1908, vol. ii, p. 1143.

THE Italian Minister of Agriculture, Industry, and Commerce has appointed a committee to study the creation and development of industries for the production of chemical preparations likely to be useful for medicinal purposes.

A PRELIMINARY NOTE ON THE NATURE AND TREATMENT OF CONCUSSION.

BY

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IN the treatment of neurasthenic conditions arising in the course of the war one point would appear to have attracted but little attention. Almost every patient will be found to have more or less difficulty with reading. This is usually taken for granted and passed over as a mere incident. In reality it gives a clue to the most efficient treatment of such cases, from whatever cause arising.

The living body may be compared to an electrical system, which may break down owing to faults either in the circuit or in the battery. An organic nervous lesion may be compared to a break in the circuit, a functional nervous condition to a lowered efficiency of the battery, affecting the whole circuit, but usually showing its effects more markedly in some parts than in others.

The patient who has had a head injury involving the loss of brain substance usually shows signs and symptoms that are recognized as those of an organic lesion, but he also shows signs and symptoms which cannot be directly associated with the definite organic lesion and are the result of the shock to the nervous system as a whole; a functional condition is superimposed upon the organic. A destructive lesion of the left lingual gyrus, for instance, does account for blindness of a quadrant of both fields of vision; it does not account *per se* for giddiness, nausea, tremors, palpitation, dyspepsia, functional paralysis, neuralgia, and joint pains lasting, perhaps, for months. In cases of concussion without injury the same group of functional conditions occurs, and such cases differ from the neurasthenias of everyday life only in severity and apparent suddenness of onset, the cause being the same in every case—namely, a lowered efficiency of the battery.

Neurasthenia, in the widest possible sense of the term, corresponding to a lowered efficiency of the battery, is a general condition affecting every function, organ, and tissue of the body, though its effects are usually more marked upon some one function or organ or tissue than upon the rest, so that different names or labels become attached to different forms of the same underlying condition. The ciliary muscle is affected equally with the rest of the body, with the result that the smallest errors of refraction frequently become almost insuperable difficulties. Asthenopia following head injury or concussion is rarely due to any definite injury of the eye or its nerve supply, but simply to an inability of the ciliary muscle to make the smallest effort. Even a 0.25 cylinder may in these conditions alter the visual acuity from less than $\frac{6}{60}$ to $\frac{6}{6}$; and in most cases the visual acuity can readily be shown to depend simply upon the refractive error. The patient who has had a sudden paresis of an external ocular muscle may have diplopia, headache, giddiness, nausea, and vomiting; the physician is satisfied as to his diagnosis because it stares him in the face. Paresis of the ciliary muscle does not, but its results are frequently the same, with the added possibility that the conjunction of these symptoms with a hypermetropic disc may suggest an intracranial tumour.

If neurasthenia corresponds to a lowered efficiency of the battery it is obvious that there are two lines of treatment—the one to increase the efficiency of the battery, say by suggestion; the other to give the battery less to do, say by putting the patient to bed. A patient suffering from head injury or shell shock is usually put to bed and rested in every possible way; almost the only organs of his body upon which any constant voluntary effort falls are his eyes. At first the mere stimulus of light may be intolerable to him, and he lies with his eyes shut as far as possible; later he may be comfortable except when he changes his position. His next step is probably an attempt to read, and the difficulties of near vision are added to those of distant vision; when he gets up more frequent changes of position cause a recrudescence of his giddiness, headache, and nausea. In fact, throughout his convalescence his chief energies are, consciously or unconsciously, being spent upon his eyes, because without the use of his eyes he can do little or nothing, and during all his waking moments a large proportion of his diminished available energy is being spent upon them, the result being that the rest of his body is starved. Various functional effects follow, and the patient falls a ready victim to organisms normal to the body and their toxins. But by correcting the refractive error the work which the eyes have to do can be reduced to a minimum and a much smaller strain put upon the battery. It cannot be too strongly insisted upon that refractive errors are almost universal, and only require care and patience to find. The effect of accurately correcting them in acute cases is dramatic, and if patients with head injury or concussion are not rapidly improving, their refraction should be estimated under atropine (unless it is contra-indicated) while they are still in bed, and accurate glasses supplied as soon as possible. If a stock of circular cylinders with frames to fit them is kept, this can be done immediately; spheres may be fastened in front of cylinders with thin strips of strapping. The glasses should be stopped as soon as possible for distant vision, but continued much longer for near work.

It is absurd to ascribe neurasthenic conditions to errors of refraction, but refractive errors are basic factors, and their accurate correction breaks a vicious circle. The facts are hard to explain except on the hypothesis that there are two centres of energy, each supplying all the structures of one half of the body. Unilateral symptoms—for example, functional hemiplegia, hemianaesthesia, hemianosmia and hemiageusia, unilateral nerve-deafness-headache and head noises, the more exaggerated knee jerk, the more functionally limited visual field, unilateral or the worse tremors, convulsions and acroparaesthesiae will, with very few exceptions, be found to be on the sid of the eye with the more work to do; usually on the side of the eye with the greater of two different errors or with the more abnormal of two approximately equal errors.

The earlier the refraction is corrected the easier it is to do, the more likely the correction is to be effectual, and the more willing the patient is to wear the glasses. The nature of the error does not matter in the least—everything depends on the accuracy of the correction. The object to be aimed at it is to leave a minimum, and as far as possible equal, amount of error for each eye to correct. An over-correction does no good and may do a great deal of harm. If the astigmatism is not fully corrected the probable result will be the conversion of, say, a compound hypermetropic astigmatism into an artificial compound myopic or mixed astigmatism. It is useless to attempt this kind of work without an unlimited supply of patience. Atropine is almost essential, and no fixed standard, such as $\frac{6}{6}$, should be accepted. Most patients can be made to read $\frac{6}{6}$ and many $\frac{6}{4}$ under atropine. It is absurd to say that a patient will read $\frac{6}{6}$ when he comes out of atropine; very likely he will, but at the expense of his nervous system. With simple astigmatism the results are almost certain; mixed or compound cases are much more difficult. Whether the patient is complaining of his eyes or not makes no difference. Giddiness is far more diagnostic of ciliary paresis than is headache. It is no great compliment to Weir Mitchell to adopt his system of rest cure, which, with suggestion, is the usual line of treatment in these cases, and to ignore his pioneer work on the paramount importance of eyestrain.

My work is on the lines of that of Dr. George M. Gould of Philadelphia; but I have formed my conclusions entirely on my own results, and I only read his *Biographic Clinics* a few weeks ago.

A CONFERENCE on sanitary administration under war conditions will be held in London by the Royal Sanitary Institute on June 8th and 9th. The subjects selected for discussion in the mornings are the maintenance of the standard of municipal sanitation and the Mental Deficiency Act. Visits will be paid to certain public works in the afternoons.

A SOCIETY for the scientific study of infancy from the biological, psychological, and clinical points of view has recently been established at Naples on the initiative of Professor Cacace, founder of the Istituto Nipioigienico, which comprises departments of medical consultations for infants, *gouttes de lait*, *crèches*, maternity wards, provident funds for mothers, instruction in motherhood and puericulture, and laboratories for the examination of milk, and the biological and hygienic study of sucklings.

THREE CASES OF PAROXYSMAL HAEMOGLOBINURIA IN SOLDIERS.

BY

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IN view of the comparative rarity of this condition the following cases possess considerable interest. All three men were in the early stages of their military training and paraded sick owing to discoloration of the urine, which, coupled with a feeling of great exhaustion, caused them considerable alarm.

CASE I.

Private H., aged 18. No history of venereal disease. Woke up one morning after night operations feeling very weak and shivery, and noticed that his urine was red in colour. His temperature was 100.8°; no physical signs could be detected, except that the spleen was just palpable. The urine was dark brown and contained heavy deposits; it showed the presence of albumin, and gave a positive reaction to the guaiacum test. On microscopic examination a few red corpuscles, a quantity of amorphous pigment, and some bladder epithelium were seen. Spectroscope examination showed the absorption bands typical of methaemoglobin.

The patient was put to bed with hot-water bottles and given warm drinks. After twenty-four hours the urine was clear, and he felt quite well, though weak. He was given an iron and arsenic tonic, and returned to special duty in a few days. He had no recurrence while under my observation.

CASE II.

Private S., aged 32, had suffered from malaria in 1912 while in the tropics. He had led a sedentary life until enlistment. His attack started suddenly with severe lumbar pains after exposure to cold and wet.

On examination he had a temperature of 102.2°, which, however, quickly fell after rest in bed. There were no abnormal physical signs; the spleen was impalpable. His urine, which was examined both microscopically and spectroscopically, presented the same characteristics as in the preceding case, differing only in specific gravity. A blood examination showed a leucocytosis of 9,800. This man continued to pass blood-stained urine for forty-eight hours. He was given similar treatment, and was soon back at work. He is now in Mesopotamia, and when I last heard from him had had no recurrence.

CASE III.

Private J., aged 28, had had a similar attack previously in civilian life. On this occasion the onset was sudden, accompanied with great exhaustion. His temperature was 102° and the spleen just palpable. After being put to bed he complained of an intense "itchiness" all over. The urine had the same physical, microscopic and spectroscopic characteristics as previously described, and he also had a leucocytosis.

He recovered from this attack in twenty-four hours, but had a relapse about six weeks later. He was eventually put to clerical work and has not suffered since.

In all these three cases the exciting cause was apparent exposure to cold coupled with considerable bodily exertion. In none was there any admission of syphilitic taint. The Wassermann reaction was not done in any of the cases. On examining the cases admitted into Guy's Hospital during the last few years, I find that in the last three the Wassermann test was performed, and was positive in all of them. Malaria is cited by some authorities as an etiological factor, and Case II had suffered from this disease. It is interesting to note that in none of these cases was the initial temperature under 100°, and that in none of them did the urine clear up under twenty-four hours. This apparent severity was, no doubt, due to the considerable exposure and exertion undergone.

The most generally accepted theory of causation is that a haemolysin exists in the blood of these cases, the amboceptor of which will only unite with the red blood cells in the presence of the complement, and at a low temperature. This low temperature was present in all the cases under consideration. It seems to me that these men, all of whom had lived sedentary lives prior to enlistment, when thrust rapidly into the full stress of military life, had given way at the weakest point, which in them happened to be in the blood. I am convinced that were a more gradual system of early training recruits more generally adopted many fewer would succumb and be invalided out of the service. In Cases I and II the patients were put back and allowed only the minimum of physical effort, which was increased by degrees with the view of more thoroughly hardening them and enabling them to withstand both cold and exposure. So far, after nearly a year in both cases, neither has to my knowledge suffered a relapse.

HEART-BLOCK IN JAUNDICE.

BY

R. D. RUDOLF, M.D.EDIN., F.R.C.P.,

LIEUTENANT-COLONEL C.A.M.C.

THE following case occurred in a hospital some months ago, where I saw him with Lieutenant Joscelyne. It was the first example that I have come across of heart-block complicating jaundice, and I now put it on record, after reading Dr. J. Davenport Windle's paper.[1] Dr. Windle states there that he does not accept the commonly-made statement that the heart tends to be slow in jaundice, and with this I fully agree. For years in civil hospital practice I have noticed this, and since coming to France, where we see a good many cases of jaundice, the point has been brought more home to me than ever. But Dr. Windle goes on to say that in his knowledge heart-block has never been demonstrated, and hence my reason for now recording the following case. It was, as will be seen from the tracings, one of partial heart-block, and, strange to say, was at once relieved completely, and, as far as we were able to observe, permanently, by a single dose of atropine.

An officer, aged 43, was admitted to hospital suffering from jaundice. It had existed for about two weeks, and was preceded by nausea and vomiting, but no pain. There was no history of syphilis, but the patient admitted having drunk too freely for years.

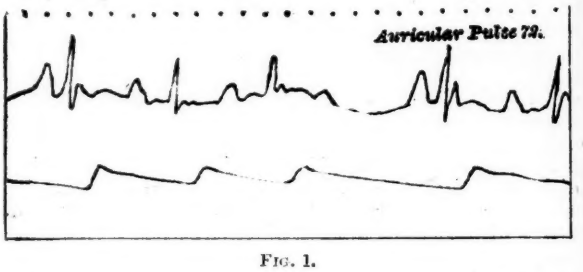

FIG. 1.

He looked ill and was deeply jaundiced. There was no oedema at first, but there was some before he left for England. There was some slight irregular fever. The liver was not palpable and seemed small on percussion. The spleen could

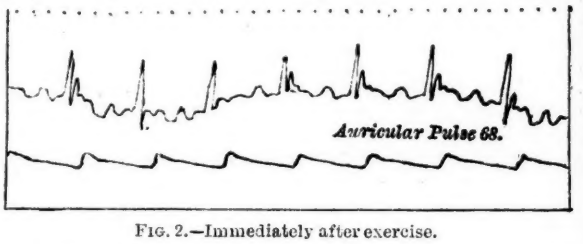

FIG. 2.—Immediately after exercise.

not be felt. The urine contained no albumin on several examinations. The pulse could be felt to be irregular in that it often missed beats, and no heart sounds occurred in the pauses. A little exertion, such as sitting up in bed several times, caused

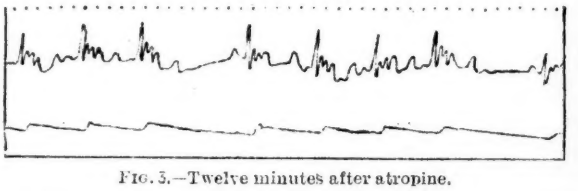

FIG. 3.—Twelve minutes after atropine.

it to become quite regular. Tracing 1 shows the pulse while the patient was at rest. The *a–c* interval will be seen to get longer and longer until it is more than $\frac{2}{3}$ second, and then the ventricle misses. After this pause the *a–c* interval is shorter at first, but gets longer and longer until another ventricular miss occurs. Figure 2 shows the action after the exercise described. The *a–c* interval is still too long, but the stimulus gets through in time and the ventricle does not miss, so that the pulse is regular for a period. It will be seen that this slight exercise caused the auricular rate to fall from 72 to 68. Next day tracings were again taken and showed these same features. Then $\frac{1}{50}$ grain of atropine sulphate was given hypodermically,

and tracings were taken every two minutes for an hour. The first effect of the atropine appeared to be a slowing of the auricular rate, which fell from 72 to 64 (as measured in the tracings), and the ventricular missings were very frequent.

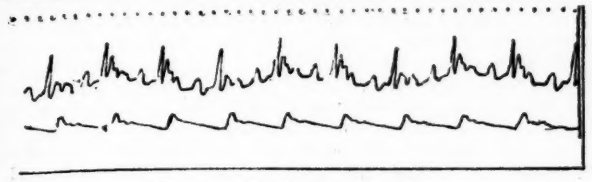

FIG. 4.—After fourteen minutes.

Tracing 3 shows the state of things twelve minutes after the administration of the drug. But at fourteen minutes, the auricular-rate being only 60, the heart had become quite regular, although the *a–c* interval still remained much too long (Tracing 4). At twenty minutes the pulse was 68 and quite regular and the *a–c* interval was shortening, and at thirty minutes after the giving of the atropine, as seen in Tracing 5,

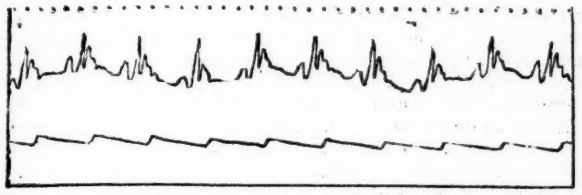

FIG. 5.—Thirty minutes after atropine.

the pulse was regular (76) and the *a–c* interval of quite normal length. The pulse was then taken by the sister for another three hours, and was always regular, and ran as follows:

12.50	p.m.	...	72	2	p.m.	...	72
1	,,	...	72	2.10	,,	...	72
1.10	,,	...	74	2.20	,,	...	70
1.20	,,	...	76	2.30	,,	...	72
1.30	,,	...	72	3	,,	...	76
1.40	,,	...	74	4	,,	...	76

The general condition became rapidly worse, and he soon developed oedema and ascites. The pulse, however, remained absolutely regular. He was very anxious to get to England, so was permitted to travel there, as the outlook in any case seemed bad.

This case was, of course, not one of simple catarrhal jaundice, but was probably one of organic disease (probably malignant) of the liver. I have no evidence that the condition of heart-block did not exist before the jaundice, except that the patient assured us that he was very fit and quite up to all his work as an officer at the front. The fact that the block was partially relieved by gentle exercise and completely and, as far as we were able to watch the case, permanently, by a single dose of atropine, would all point to the probability of the delay in transmission of stimuli through the auriculo-ventricular bundle being due rather to vagal origin than to any organic disease there. The patient had not been taking digitalis for days before the tracings were taken.

REFERENCE.

1 BRITISH MEDICAL JOURNAL, January 22nd, 1916, p. 123.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

BRADYCARDIA ASSOCIATED WITH JAUNDICE.

DR. WINDLE'S paper on the heart's action in jaundice, in the JOURNAL of January 22nd, 1916, prompts me to put on record the following case:

A male, aged 17, came to see me on September 7th, 1914, suffering from well-developed jaundice. This may have been of the epidemic type, as another younger member of the same family developed jaundice some weeks later. He had not been under observation at the onset of the illness, but the initial symptoms appear to have been slight, and he had not kept his bed. The pulse was slow (40 to 44) and irregular. Later in the day he was seen at home and a pulse curve taken. Unfortunately it was not possible to get a tracing of the jugular pulse, so simultaneous curves of the apex beat and radial pulse were taken. The rate was just under 39, and the cardiogram demonstrates that there were no premature beats; the pulse and ventricular rates were the same. This was confirmed by auscultation of the heart.

In the absence of a venous curve the presence of heart-block cannot be absolutely excluded, but it is improbable, for the following reasons: (1) In a later portion of the curve the rate is rather higher and there is marked (sinus) arrhythmia; (2) as the jaundice passed off the heart-rate

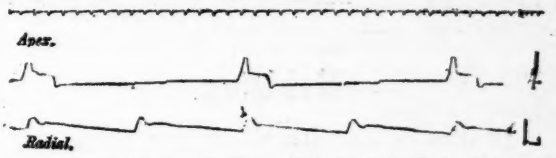

FIG. 1.—Simultaneous curves of the apex beat and radial pulse.

rose gradually. At visits to see me the rate was 43 on September 9th, 45 on September 11th, 55 on September 14th, and 56 on September 19th. It may be concluded, therefore, that, associated with the jaundice in this patient, there was a total bradycardia of high grade with a variable degree of sinus arrhythmia. His normal pulse-rate appears to be about 60. He belongs to a family several members of which have a rather slow heart-rate, his mother's being sometimes as low as 30.

Dr. Windle suggests that the arrhythmic bradycardia in these cases is not caused by the jaundice, but is the same as that which is commonly met with in young people after febrile illnesses. This may be so, and there is merely the apparent relation of the heart-rate to the degree of jaundice in my patient to suggest a causal connexion between the two. It is difficult to prove or disprove, but that the pulse-rate should not decline till the appearance of the jaundice is only what one would expect, since the latter is the outward sign of the entrance of bile into the blood circulation. Even if the jaundice appeared before the fever had subsided and the pulse had fallen, one might not be justified in concluding that bile salts do not lower the heart-rate. The fever, whatever its cause, is an opposing factor which may more than neutralize the supposed retarding influence of bile salts, just as it is difficult or impossible materially to alter the heart-rate in fever by means of digitalis.

Bradycardia is believed to be almost exclusively associated with the catarrhal type of jaundice. This is possibly due to the fact that this disease is much more common in young people, in whom apparently the retarding mechanism of the heart is very sensitive. The frequent occurrence of slow sinus arrhythmia in such patients after even slight febrile illnesses is evidence of this.

Hull. E. E. LASLETT, M.D. B.Sc.

AMOEBAE IN URINE IN A CASE OF INFECTIOUS JAUNDICE.

WITH respect to the memorandum on the occurrence of amoebae in the urine of a case of infectious jaundice, recorded by Lieutenant-Colonel Ward, Dr. Coles, and Captain Friel in your issue of April 8th, on page 526, may I point out that an organism called *Amoeba urogenitalis* was described by Baelz in 1883? The species was found in masses in the sanguineous urine as well as in the vagina of a patient in Japan. The amoebae when quiescent had a diameter of about 50 μ, and exhibited granular cytoplasm and a vesicular nucleus.

Similar cases were also reported between 1892 and 1895 by Jürgens, Kartulis, Posner, and Wijnhoff. Jürgens found small mucous cysts, containing amoeboid bodies, in the bladder of an old woman suffering from chronic cystitis; they were also found in the vagina. Kartulis observed similar organisms in the sanguineous urine of a woman suffering from a tumour of the bladder; the organisms measured 12 μ to 20 μ, and exhibited slow pseudopodial movements, and a nucleus and vacuoles were seen after staining. Posner's case, a man, also passed blood-stained urine, in which amoeboid granular bodies, about 50 μ by 28 μ, were present. The amoebae exhibited change of shape, and contained one or more nuclei as well as red blood corpuscles. The patient was under observation for over a year, during which the attacks recurred, and Posner concluded that the amoebae had penetrated into the pelvis of the kidney. Wijnhoff observed four cases of amoeburia in Utrecht, and Jeffries (1904) found similar

cases in the United States. During the last two years, I learn from friends in the Anglo-Egyptian Sudan that a few cases with amoebae in the urine have occurred there. These amoebae might be considered, nowadays, to belong to the genus *Endamoeba*.

In view of the above facts, the provisional name *Amoeba urinae granulata* seems hardly necessary.

H. B. FANTHAM,
Lecturer in Parasitology, Liverpool School of Tropical Medicine.

Reviews.

DISEASES OF THE NOSE AND THROAT.

WE said of the first edition of Sir STCLAIR THOMSON'S treatise on diseases of the nose and throat, which appeared in 1911, that it was at once the fullest and the clearest work on the subject in the English language. A second edition[1] has recently been issued, and we see no reason to modify the opinion expressed as to the first. The book in its present form bears on almost every page the marks of very careful revision, and a considerable amount of new matter has been added. An excellent account of suspension-laryngoscopy—the latest development in the methods of direct inspection of the larynx—is given. The procedure of nerve-blocking by the injection of novocain around the superior laryngeal nerves for the production of local anaesthesia is fully described. The method is said to be very useful in cases of great irritability of the larynx, and particularly as a means of preventing pain in that most distressing condition, the dysphagia of tuberculous laryngitis. Aspergillosis of the accessory sinuses receives more adequate treatment than it did in the previous edition, and the indications for the use of salvarsan are more fully set forth. The intranasal operation for drainage of the frontal sinus is described in detail. There are new sections on intranasal dacryocystostomy and on the nasal route to pituitary tumours. The chapter on removal of the tonsils has been entirely rewritten. There is considerable difference of opinion among laryngologists on the question whether only the projecting part of a diseased tonsil should be sliced off or the whole gland extirpated. British and American specialists are mostly in favour of the radical procedure. The subject is of greater importance than might seem at first sight, for disease of the tonsils is the cause of much immediate suffering and possible future detriment to the patient. It is also troublesome to the doctor, and we remember hearing a very distinguished surgeon of the mid-Victorian period declare that he would rather do three lithotomies than one tonsillotomy. To those who can recall the barbarous methods of that time the present manner of dealing with diseased tonsils represents a striking advance in surgery. Sir StClair Thomson gives a lucid and impartial exposition of the relative advantages and disadvantages of the different methods now in use. But, indeed, he everywhere handles debatable matters in a judicial spirit that makes his book a trustworthy guide to practitioners and students. The illustrations, many of which are new, add materially to the value of the book.

CANCER OF THE STOMACH.

AN elaborate clinical and pathological study of carcinoma of the stomach has recently been published by Drs. SMITHIES and OCHSNER,[2] based on a series of 921 cases seen during the last decade and buttressed with numerous references to the recent literature of the subject. The authors break little or no new ground in their survey, but perform a most valuable service in bringing together the indications for diagnosis and treatment in this most serious affection and casting fresh light on other points of minor importance. Previous writers, for example, have found cancer of the stomach to be a little commoner in females than in males; in this series of American cases however, the males were just over three times as many as the females. As regards age, 350 of the patients were aged from 50 to 59, and 85 per cent. were from 40 to 69 years old. The authors find that material prosperity, or the tendency to over-eating, promotes the occurrence of carcinoma of the stomach; trauma may have been a contributory cause in only 21 of their patients, and a family history of cancer was obtained in 8.5 per cent. In a series of 566 cases specially examined for the purpose, it appeared that there were good reasons for supposing that a gastric ulcer had preceded the cancer in no fewer than 60.5 per cent.; they do not attempt to estimate the percentage of the patients with ulcer of the stomach in whom the ulcer subsequently becomes carcinomatous. Very full accounts of the morbid anatomy, symptomatology, clinical manifestations, diagnosis, and *x*-ray appearances in cancer of the stomach are given. So far as treatment is concerned, the authors strongly urge laparotomy and excision of the ulcer or growth wherever possible in all cases in which there is reason to suppose that a carcinoma is present. Dr. Ochsner gives full descriptions of the operations advised for the complete or partial excisions, the curative or palliative surgical treatments, he has found most practical and efficacious. The book is full of interesting details, and is well illustrated; the authors write clearly and temperately. Their work may be warmly recommended to the attention of all surgeons and physicians; it ends with an excellent account of the non-surgical treatment of the disease.

EYES FOR THE LAYMAN.

THE eyesight is by common consent the most precious of the senses. During infancy and childhood much can be done by carelessness and ignorance to injure or even destroy the sight, and it is only in the last few decades that public attention has been at all adequately directed to the proper protection and conservation of the vision of children. Much still remains to be done; the British public still has a great deal to learn about the elementary physiology of the eyes and the precautions that should be taken in every school and every home to prevent the young from misusing their eyes. An ophthalmic surgeon of special experience in this matter, Mr. N. BISHOP HARMAN, has quite recently published an admirable account[3] of the dangers and disasters threatening the eyes of children; the book is one that should be very widely read. It is written in simple language that any layman should be able to understand, and in spite of its simplicity succeeds in giving a clear and complete presentation of the subject. Its successive chapters deal with topics familiar to all of us, such as sore eyes, pink eye, eye-strain, astigmatism, short sight, squint, and the great question of spectacles; later chapters deal with the lighting of rooms, the best arrangements for illumination when reading, writing, and work have to be done, and other like subjects. We can strongly recommend this book to the attention of the general public. It fills a long-felt want, and fills it to perfection, for it leaves out none of the essentials of the subject and is written in a style that is both convincing and attractive.

MEDICAL JURISPRUDENCE.

IN reviewing the first edition of Dr. W. G. AITCHISON ROBERTSON'S work on *Medical Jurisprudence, Toxicology, and Public Health*,[4] we referred to it as the most remarkable case of condensation within our experience. This was in 1908, and now in 1916 the third edition is before us with two new chapters (Medical Inspection of School Children and Diseases of Occupation). We then expressed a fear that such a concentrated diet might produce mental indigestion in students, but the fact that three editions have been called for in eight years proves our fears groundless. Is it advancing years bringing a wider survey of students' educational needs, or is it the reviewer's increasing experience as an examiner that has brought him in the interval to a more appreciative frame of mind as regards the merit of the book? We do not know, but

[1] *Diseases of the Nose and Throat, comprising Affections of the Trachea and Oesophagus: A Textbook for Students and Practitioners.* By Sir StClair Thomson, M.D., F.R.C.P Lond., F.R.C.S. Eng. Second edition. London, New York, Toronto, and Melbourne: Cassell and Co., Ltd. 1916. (Med. 8vo, with 22 plates and 337 figures in the text. 25s. net.)

[2] *Cancer of the Stomach.* By F. Smithies, M.D.; with a chapter on the Surgical Treatment of Gastric Cancer, by A. J. Ochsner, M.D., LL.D., F.R.C.S. Philadelphia and London: W. B. Saunders and Co. 1916. Roy. 8vo, pp. 522; 106 figures. 24s. net.)

[3] *The Eyes of our Children.* By N. Bishop Harman, M.A., M.B.Cantab., F.R.C.S. London: Methuen and Co., Ltd. 1916. (Fcap. 8vo, pp. 129. 1s. net.)

[4] *Manual of Medical Jurisprudence, Toxicology, and Public Health.* By W. G. Aitchison Robertson, M.D., D.Sc., F.R.C.P.E., F.R.S.E. Third edition. London: A. and C. Black, Ltd. 1916. (Cr. 8vo, pp. 658; 51 figures, 1 plate. 10s. 6d. net.)

can only say that we could almost hope to see it made the standard textbook for students on the subjects dealt with. Everything is there that a student ought to know, and that, too, in just the right perspective, and expressed so clearly and so pleasantly that we have been beguiled into reading nearly the whole work. There is, of course, a large superstructure to be built on the foundation here supplied, and that experience alone can bring about, but it is safe to say that no part of such superstructure need be without a sure foundation if a student has carefully followed Dr. Robertson's words and meaning.

NOTES ON BOOKS.

THE Research Department of University College Hospital Medical School has recently issued[5] a collection of ten papers dealing with work done beneath its roof in the years 1914-15. These papers deal with pathological and physiological subjects of considerable variety, and have all appeared previously in scientific periodicals. Dr. Lewis, one of the directors of the department, contributes, with Mr. Barcroft, a further account of the dyspnoea that may accompany a reduction in the normal alkalinity of the blood and the various symptoms that may be associated therewith. Dr. Bolton, in a paper first appearing last year in the *Journal of Pathology and Bacteriology*, gives an elaborate account of the relation of the acidity of the gastric juice to the production and maintenance of gastric ulcer. Other papers of no little interest will be found in this collection, which contains evidence of much solid labour.

Dr. MCCARRISON has republished in book form five of his papers on *Goitre and Cretinism*[6] that have already made their appearance in the *Indian Journal of Medical Research*. Several of these have already been noted in the BRITISH MEDICAL JOURNAL. As is well known, Major McCarrison has done much to establish the fact that many cases of goitre are due to the consumption of infected drinking water, although it is true that the actual virus of goitre has hitherto escaped isolation in the laboratory. This reprint is of particular value because the originals of the five articles appearing in it must be inaccessible to the majority of medical men in this country.

The *Indian Manual of First Aid*[7] of Lieutenant-Colonel BLACKHAM has reached its twelfth edition. It gives a capital account of the subject, and naturally has plenty to say about the special accidents to which dwellers in India are exposed. It should be in the hands of all English-speaking foreigners in India.

A singularly depressing and untimely picture of life in the Russian army is furnished by a recently translated Russian novel, *The Duel*.[8] Its author, we are told, was born in 1870, passed through the cadet school and military college at Moscow, entered the army as lieutenant in 1890, and resigned after seven years to devote himself to literature. The hero of the novel is Sub-lieutenant Romashov, a weak-kneed idealist who could never have made a soldier. The novel is devoted to describing the way in which the hero undoes himself by witlessness, wine, and women. At the end of the book the heroine succeeds in selling both herself and her lover's life by a single stroke of perfidy. Not one of the characters, male or female, can be described as normal; all have their repulsive features, all are grossly vicious in public or private—or both; from the military point of view all are incompetent but one. The Russian army is described as composed of "those defenceless victims of their own ignorance and brutal coarseness, of the officer's heartless indifference and cruelty, of a humiliating systematic slavery; but the most horrible of all, however, was the fact that not a single officer . . . saw in these stereotyped crowds of slaves anything beyond mechanical quantities bracketed under the name of companies, battalions, regiments, etc." We read that the Russian "soldier's courage is inspired by drink. Military discipline still exists, but it is based on threats and dread, and undermined by a dull, mutual hatred." It will be seen that the author takes a consistently gloomy and depressing view of the Russian army and all its works. Yet nothing could have given him the lie better than the whole course of the present war upon the Eastern front. Nothing could have shown up the inherent falseness of the author's views about the Russian army better than the magnificent spirit and solidarity with which it has borne up for twenty months against the onslaughts of the far better armed and prepared Central Powers. The book has been fairly well translated. It is one for our pessimists to read, and read with pleasure; they will overlook the fact that its whole thesis is being contradicted daily by the test of war.

The world knows very little of what actually goes on at the front in France day by day. Spies are many, information of great value to the enemy is easily picked up, and the Allied Governments have rightly done their best to screen their military operations in detail behind an impenetrable veil of secrecy. An American journalist, however, has been given the opportunity to inspect for himself the conduct of warfare in and behind the French trenches. As he says, "To obtain me permission to see the French fighting machine in action required the united influence of three Cabinet Ministers, a British peer, two ambassadors, a score of newspapers—and the patience of a Job." He gives an excellent account of his experiences in a book recently published,[9] with scores of most illuminating photographs. He was most struck by the organized efficiency of the French, the profound conviction of victory with which they are animated, and the incredible horrors of modern warfare in the combinations of slaughterhouse and sewer known as trenches. He refers again and again to the waste and desolation left by the passage of war through countryside and village. He has been unfavourably impressed by the lack of seriousness with which the British make war—an old complaint often brought against us in past centuries, both inevitable and true. The book gives an admirable picture of modern warfare in its general aspects, and for that reason should be widely read. It is of particular interest to medical men for the reason that its writer has seen much of the wounded and the vastly improved organization that has now been evolved to succour them without delay. "As one Tommy remarked, 'You 'ears the 'ell of a noise, and then the nurse says: "Sit hup and tike this broth"'"—so speedy is the transit from battlefield to hospital.

[5] University College Hospital Medical School (University of London). Research Department. Directors: Dr. C. Bolton and Dr. A. E. Boycott, F.R.S. *Collected Papers*, vol. v, January, 1916.

[6] *Collected Papers on Goitre and Cretinism, 1913-14.* By R. McCarrison, M.D., F.R.C.P., D.Sc., Major I.M.S. Calcutta: Thacker, Spink, and Co. 1915. (Cr. 4to; illustrated.)

[7] *The Indian Manual of First Aid.* By Lieutenant-Colonel R. J. Blackham, C.I.E., R.A.M.C. Twelfth edition. Bombay: G. Claridge and Co. 1915. (3¾ × 5, pp. 210; 68 figures. 1 rupee.)

[8] *The Duel.* By A. Kuprin. London: G. Allen and Unwin, Ltd. 1916. (Cr. 8vo, pp. 350. 6s.)

[9] *Vive la France.* By E. A. Powell. London: W. Heinemann 1916. (Cr. 8vo, pp. 268; illustrated. 3s. 6d. net.)

WAR WASTAGE AND THE BIRTH-RATE.

GERMANY AND GREAT BRITAIN.

IN a recent report Dr. Newsholme has calculated that had the birth-rate of England and Wales been the same in 1914 as in 1876 there would have been 467,837 more infants born in 1914 than actually saw the light. In an official report to the Lower House of the Prussian Diet, on February 25th, it was stated that there were now 560,000 fewer births in Germany than would have occurred if the birth-rate of the year 1900 had been maintained. It was stated, further, that the decline of the birth-rate in Germany in twelve years had been as rapid as that in France in seventy, and that the number of births in Germany had sunk 75 per cent. more than the number of deaths.

The decline in the birth-rate has combined with the appalling wastage of the able-bodied male population in the war to make the maintenance of the population in the future a matter of frequent discussion in Germany. A society with the title Deutsche Gesellschaft für Bevölkerungspolitik has been founded by Professor Julius Wolf, who, in an address[1] at the first meeting, said that though the working classes were inclined to dread any interference with their mode of life, the increase of population after 1880 had coincided with enormous improvements in their condition; the lot of the working man in France with its low birth-rate was certainly not better than that of the German. He expounded what he called a "positive policy of population." Every effort should be made to encourage a will to marry and bring up a large family. The average age of marriage in Prussia was for men 29, and for women from 25 to 26.[2] Were marriages contracted earlier, not

[1] *Deut. med. Woch.*, November 4th, 1915.

[2] In England and Wales the mean ages at marriage in 1913 were bachelors 27.56, spinsters 25.78.

only would the birth-rate rise, but the incidence of venereal disease would fall. He advocated a reform in professional education which would enable a man to earn his living earlier, and to postpone some of his studies. Social problems, including housing and wages, were, he said, also closely connected with the birth-rate. The indirect taxation was burdensome to the working classes. Germany's fiscal policy penalized families with many children, and dealt lightly with bachelors and families with only one or two children. At present the third child in a family was an embarrassment, and the fourth a sorrow. The fact that the infant mortality was considerably greater in some places than in others showed that it was still capable of reduction, and young girls should be educated in domestic duties, and the will to marry and the will to propagate inculcated. Fräulein Müller, President of the Deutsch-evangelischen Frauenbund, promised the support of her society, but Herr D. Naumann, a Reichstag Deputy, was pessimistic as to the efficacy of the methods advocated. The relation of the housing problem to the birth-rate was, he said, obscure, districts with the best housing conditions sometimes showing the lowest birth-rate. The will to propagate, he added, was feeblest among Government officials, in spite of the fact that their economic future was secure. Dr. Hofmeier, speaking as a gynaecologist of more than twenty-five years' experience, said that the fall in the birth-rate was principally due to economic factors. He urged that the 180,000 illegitimate children born every year should not be neglected; for lack of care their death-rate was 25 to 30 per cent.

At a conference of the Zentralstelle für Volkswohlfahrt,[3] stock proposals, such as the special taxation of bachelors, were made, but Dr. Christian of Berlin suggested that the present system of monogamy for life might not meet future needs. He calculated that, were the birth-rate and death-rate of the German nation in 1912 to be maintained, the increase of the population within the next twenty years would be reduced only from 16.8 to 14 millions by the war. The deficit would be completely made good were the fecundity of the married to be maintained at the level of 1901 to 1910. Frau Fürth advocated extension of insurance, provision of subsidies, and the care of the unmarried mother. The suckling bonus, established soon after the outbreak of the war, should not be confined to the first twelve weeks, but should be given as long as the mother suckled her infant, up to eight or nine months. Celibacy among female officials should no longer be insisted on, and women engaged in professional duties should be encouraged to marry.

At this conference a school medical officer, Dr. Lewandowski, stated that the changes in the nation's diet caused by the war had reacted on school children's weight, which had not increased as much as in times of peace, but otherwise they had not suffered; the increased employment of women had, however, led to a corresponding neglect of young children. Frau Direktor Deutsch said that the German women had shown themselves admirably qualified for professional work during the war, but in household duties had not fulfilled all that was required; she suggested State schools for housewives and mothers in which the teaching would be adapted to the requirements of the various grades of society, and Fräulein Lange went so far as to suggest that domestic training for women should be made compulsory, as was military service for men.

As in this country, efforts have been made in Germany to diminish infantile mortality, but the results have not been conspicuously successful there. According to Dr. W. A. Brend, the infantile mortality-rate from 1901 to 1912 averaged 184 (exclusive of stillbirths). Mr. Benjamin Broadbent of Huddersfield, who speaks with special authority, seems to think that the reason for the comparative failure in Germany is that the schemes evolved there have savoured too much of the drill sergeant, and have not had sufficient regard to what in this country has from the first been looked upon as the fundamental doctrine—namely, that the mother, and the mother only, can properly tend the babe, and that the proper place for the mother and the babe is the home. We may, therefore, take comfort that we are working along right lines, and that expansion of the system of maternity and child welfare centres will result in a still further reduction in the infantile death-rate. There was unfortunately last year an increase in the rate. The rate in England and Wales fell from 163 in 1899 to 95 in 1912 but rose again in the following year. In 1914 it was 105, and in 1915, 110. In Scotland in 1915 the infantile mortality-rate was 126, which is higher than in any year since 1901. It is 15 more than in 1914, 17 more than the mean of the five preceding years, and 14 more than the mean of the ten preceding years.

[3] *Deut. med. Woch.*, November 11th, 18th, and 25th, 1915.

Preventive Obstetrics.

It is not yet, perhaps, as fully recognized as it ought to be that there is in obstetric practice a large sphere of preventive medicine which has hardly been entered upon. A great debt of gratitude is due to the pioneer work done at the Edinburgh Royal Maternity Hospital. The report by Dr. J. W. Ballantyne, published recently in the Journal,[4] shows that the hospital, by attracting dangerous complications of pregnancy, has helped to demonstrate the widely fatal effects upon the life of the child before birth—embryo or fetus—of morbid states of the expectant mother. No statistics have hitherto given any indication of the gravity of the facts, for there has been and is no means of gauging with any approach to accuracy the number of abortions which occur in this country as the result of maternal pathological conditions, and it is only recently that legislation has been sanctioned requiring the notification of stillbirths—that is, of pregnancies interrupted after the twenty-eighth week. Reference is not here made to criminal induction of abortion, but only to the miscarriages which take place as the result of one or other of the morbid states of the mother or of the contents of the uterus. There exists no means of making more than a guess at the frequency of such antenatal casualties, but the Edinburgh statistics justify the statement that the number of pregnancies ending as abortions, and therefore disastrously for the new life in the womb, is not small.

As an instance of the heavy loss of antenatal life to which reference is being made, the results of the prematernity work done at the Edinburgh hospital in the autumn quarter of 1912 may be taken. During the three months 36 women (7 unmarried and the rest married) were treated in the prematernity ward for one or other of the maladies of pregnancy; 2 of them were so completely relieved of their troubles that they were able to return to their homes, pregnancy continuing; 33 were delivered safely in the hospital; one girl suffering from acidosis of a grave type at the fourth month of pregnancy died. There was, therefore, one maternal death out of the 36 cases (not quite 3 per cent.), not a high mortality having regard to the nature of the cases. Three of the infants died after birth, and again it can be claimed that the post-natal death-rate was not high considering the diseases from which the mothers of the infants were suffering. But when the antenatal mortality is looked at a very different and a much less satisfactory state of matters is revealed: 17 of the infants were born alive and survived, and 17 died before they left the womb, whilst 3 (as already stated) died after birth. Out of 37 antenatal lives, therefore, 17, or nearly 46 per cent., were lost in the uterus. It is true that the gravity of the figures is to some extent lessened by the fact that one of the cases was a triplet abortion (counting as *three* antenatal deaths), and that there were 6 other abortions; thus 9 of the prenatal deaths were the result of miscarriage, for of course the embryos were not viable. Yet the deductions only serve to throw into clearer light the fact that miscarriages, whatever may be their effect upon maternal health and life, are most disastrous to antenatal life.

In this apparently gloomy fact, however, there lies hidden a hopeful one. Miscarriages are in many cases preventable, and it may turn out that one of the most beneficent parts of the work to be done by antenatal clinics and prematernity practice in the future may be the prevention of threatened or probable abortions. At the present stage it is not possible to discuss whether the child born as the result of a pregnancy in which a miscarriage threatened will be less fit physically and mentally to fight the battles of life; but, in the meantime, the prevention of antenatal deaths due to miscarriages is an object to be aimed at. There is at present a vast amount of maternal suffering in the period of expectancy among women of the

[4] February 5th, 12th, and 19th, pp. 189, 234, and 275.

working class if the gestations be complicated by any of the many morbid states to which they are liable. The single fact mentioned in the report here quoted—that of thirty-one mothers suffering from albuminuria one only developed eclampsia—speaks strongly for the value of the work done.

Prevention is the keynote of the whole prematernity movement. At present it is not known how many lives are lost antenatally, and therefore how many might be saved cannot be stated; but there can be no doubt that many are so lost, and there is justification for the belief that by antenatal clinics and prematernity practice not a few of them may be saved. Infant life will be not less but much more valuable after the war, and the politician no less than the hygienist will be well advised to consider closely all available means of saving the unborn.

MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAC BUIST.

The New Taxes.

The prohibition of the further importation of passenger-car chassis and parts has brought to an end the revenue planned by Mr. McKenna in his autumn Budget to be reaped as an additional war-time contribution from motoring. The sum received by the Exchequer while those duties were in force and the trade was free to import foreign cars and cycles amounted to £540,609. At this rate, had those duties remained in force for a full year, they would have amounted to a very appreciable sum more than the £800,000 which the Chancellor of the Exchequer hopes to reap from the alternative revenue from motoring through the new scale of licence fees. In face of the lapse of the duties through the prohibition of imports it was to be expected that motoring would in any case be taxed in an alternative way to yield some special war-time revenue.

The two obvious alternatives were increased licence fees or heavier petrol duties. There are many phases of the petrol situation which may not be made public, but which are quite appreciated by the Government. I am convinced, however, that had the Chancellor raised the duty on petrol instead of introducing heavier car licences, his proposals would have come in for a great deal more criticism from the motoring community than they are receiving now.

The Alternatives.

The medical man who has not studied the matter in all its bearings may protest in all reasonableness that his car is as much a utility vehicle and as little a pleasure carriage as is the munition maker's motor-lorry, and he may ask why the whole of the burden of the new taxation is not placed on the shoulders of those who motor for pleasure and of whom there has been so much talk of late. The answer is that the data collected by the various motoring organizations from every quarter of the kingdom reveals that only a negligible quantity of passenger cars out of the total in use in the country are being employed for pleasure as distinct from one business purpose or another. Were the share of the revenue to be raised apportioned to this residue of pleasure car owners, the individual contribution would be so heavy that, practically without exception, the owners would be compelled to put their cars by, and therefore no money would be forthcoming for the Exchequer from this source. The question was whether the burden of taxation could be divided between the owners of passenger cars or whether some of the burden should be placed on the shoulders of the users of "utility" motor vehicles.

The Effect of the Higher Licences on Various Types of Car.

As far as this new taxation is concerned, at least 90 per cent. of medical men fall under the head of one of three groups. Let us consider each in turn, beginning with the least taxed classes as being those that probably constitute the greatest numbers.

First in the scale we have the light car users, such as Standard car, Swift, Singer, Stellite, and owners of such like vehicles, who will have to pay 3 guineas more licence fees for the full motoring year beginning January, 1917, and £2 7s. 3d., being three-quarters of the increased fee for the right to use their cars after August 15th next, because the new duties have been made law after only one quarter of the current year has lapsed.

Next we come to the class using such machines as 12-h.p. Rovers, and, indeed, anything up to the size of what is in point of accommodation a really big vehicle of great speed possibilities, such as the 16-h.p. Sunbeam. By the new scale of taxes those driving four-cylinder vehicles which do not exceed 80 mm. or $3\frac{5}{32}$ in. cylinder bore will have to pay 3 guineas more for their motoring in 1916 if they want to employ their cars after August 15th next, and 4 guineas a year more for the full year beginning January, 1917.

In the case of those medical men who have cars that come within more than the third degree of taxation on the new scale, motoring would cost each 9 guineas more than he anticipated this year, and 12 guineas, or 5s. 3d. a week, more for the full year of 1917. This would be a material matter chiefly in the case of owners of Ford cars, some of whom, I gather, are suggesting that the whole system of Treasury rating should be altered, and the tax based, instead, on the original price of the car. While frankly admitting that some owners of such vehicles would feel the strain of an extra war levy of this sort, one has nevertheless to confess that it is to the interest of medical men as to all other sections of the community that no taxation system should be adopted that should prejudice the mechanical development of the motor. In what direction during recent years has the motor been evolved so that we are getting light, refined, and small power packets to do as much work and develop as good a turn of speed as large ones did formerly and with vastly more refinement? Briefly, by the development of a longer stroke in relation to bore. "Yes," the Ford owner may say, "I quite agree that, as regards British-made cars, or, for that matter, European ones, the present system of taxation is fair, but it is quite unfair to the American machine." That remark, however, is not quite accurate. If those American machines that constitute the newer models, and show that their makers have been making better motors of recent years, are studied it will be found that to get the efficiency, the refinement of working, the power from the engine volume, the flexibility, and so forth, there has been a gradual lengthening of stroke measurement in relation to bore.

Many of the 1916 American models come off quite well under this new Treasury rating. Take the car that is produced on the next largest scale to the Ford, the 12-h.p. 1916 Willys-Overland. Under the new scheme this machine is only taxed 4 guineas more for the whole year, because it is a new and modern design of engine. On the other hand, the Ford engine measurements have not varied since 1908. (See *Autocar*, November 7th, 1908.)

How the Medical Man may be Relieved.

In my opinion it would not be justifiable to alter the basis for arriving at amount of taxation unless it could be shown besides that by so doing the evolution of the motor would be encouraged. In the circumstances, far from encouraging development, it would be discouraged and a premium put on a type of motor which has contributed nothing to the world's knowledge of how to improve the liquid fuel internal combustion engine, while owners of other American manufactures, to say nothing of the British and European ones, the makers of which have been developing their motors from year to year, and the bore and stroke of whose machines do not remain in 1916 what they were seven and more years ago, would be penalized.

The medical man has to remember that, as an income-tax payer, his car charges are allowed to him as a business expense, and also that he has paid only half licence rates hitherto. If the duty had been put on petrol instead of on cars, even with the rebate allowed to medical men, those who would be paying respectively 3 and 4 guineas a year more for their motoring under the new licence scheme would not be as well off as they would be as matters now stand, while it is doubtful if those who will come within the 12 guineas extra tax will be much, if any, worse off. In any case it would not be good policy for the Treasury to upset the whole line of motor engineering development, which the New World itself is now copying from this country, merely to suit one particular class of machine; such a course would, moreover, have the effect of imposing additional burdens on the owners of dozens of other types of machines much used by the medical profession.

Therefore, in seeking a remedy for the case of the medical man, including owners of Ford cars or other machines of more than 16-h.p.—the British Medical Association has made representations on behalf of the profession to the Chancellor of the Exchequer this week—I suggest that his particular case could be served with least disturbance and most general satisfaction by making the extra duty only half what the ordinary member of the public will have to pay for any class according to Treasury rating. Thus, on a car of more than 16-h.p. the doctor would pay a war tax of only 6 guineas a year, or 2s. 7½d. a week, against the public paying 12 guineas, or 5s. 3d. a week. The policy, moreover, would be akin to the treatment of the profession in the matter of existing licences, also to the granting of a rebate on petrol duty to the medical profession. Thus no medical man would pay a total fee of more than 9 guineas a year for the use of any car suitable and necessary for doctors' work, and two-thirds of that tax is only a war-time levy. Suppose it obtains for two years, the Ford would still provide very cheap motoring for the profession.

Mr. McKenna's Concessions.

As the foregoing goes to press, Mr. McKenna's reply in the House of Commons to Sir C. Kinloch-Cooke is announced, to the effect that the existing concession, under which registered medical practitioners pay only half rates on licences for motor cars and motor cycles, will be extended to the new duties. This, therefore, accords with the solution of the problem suggested above. In practice it means that the medical man will only have to pay a total of 3 guineas a year for the use of a light car; 4 guineas a year for the use of a machine not exceeding 16-h.p. Treasury rating; and of 9 guineas a year for a machine exceeding 16-h.p. Treasury rating; whereas the general member of the public will pay 6, 8, and 18 guineas in respect of those various classes of vehicles. The actual sums of money which doctors will have to disburse by way of extra duty this year are respectively £1 3s. 7½d. and one guinea and a half in mid-August for light cars and for machines not exceeding 16-h.p.; and in July £4 14s. 6d. for a machine of over 16-h.p. Treasury rating, for which the public will pay 9 guineas. Medical men using motor bicycles as well as side-cars are treated in the same way. Considering the crisis through which the nation is passing, and the urgent need of raising revenue, Mr. McKenna is treating the medical profession with fairness and understanding.

The Fuel Problem.

Far more serious for the medical man, as for the rest of the motoring community, is the petrol situation, if only for the reason that, whereas financial obligations in relation to licence fees are foreknown, in the matter of petrol prices none of us know where we stand from one week to another. The Government is striving to the utmost of its power to relieve the situation by imposing no more duties on motor fuel, which is rightly deemed to cost the community too dear already. It goes further, for the new scale of licence taxes very distinctly discourages the use of large-engined cars of the character that are greedy of motor fuel. When an owner has to pay £126 a year for the mere right to take his car out of the garage the Government is going about as near to prohibition of a particular class of motoring as any one can reasonably expect.

All the talk of the Government taking control of the petrol companies and compelling them to supply the public at fixed rates is utter absurdity, for the simple reason that if it fixed rates, still without incurring loss, it could not supply the public at cheaper rates than they are paying for their petrol now. Reduced to plain terms, petrol is worth just as much as it will fetch in the world's markets, and, as we are dependent on Transatlantic markets for the bulk of the supplies used by the public, we must pay what that fuel will command there plus the cost of bringing and distributing it here. Since last this matter was touched on in these columns there has been another 2d. a gallon advance in the price of Pratt's and the majority of other brands, consequent on the rise in the wholesale price of motor fuel on the part of the various refiners in the New World from whom the Anglo-American and other companies here have to buy their supplies. Briefly, the reason of the rise is that expansion of the consumption of motor fuel in the United States will demand 25 per cent. more fuel than the total produced in the last year, of which total not more than 20 per cent. was exported, so that there is a threatened shortage of 5 per cent. for this year's requirements in America unless extra sources of supply are developed. Such resources are being developed, but gain under this head is offset by the facts that over one hundred American controlled oil wells in Mexico are at present idle owing to lack of transport facilities, that there is a blockage of shipping in the Panama Canal which is hampering the Rockefeller group in their dealings with the East, and that the production of the Cushing oilfield in the States has fallen off from 300,000 to 100,000 barrels a day of crude oil of the highest petrol content; besides which, for the time being, alternative fuels cannot be placed on the market of the New World by reason of the fact that the Steel Corporation and suchlike enterprises, which installed plant for producing benzole to compete with petrol when the price of the latter was only 20 cents an American gallon, are disposing of all their output of benzole now at between 80 and 90 cents an American gallon to the dye industries and to the makers of explosives.

Dr. Rittman's Prophecy.

Dr. W. F. Rittman, inventor of the process which is claimed to yield anything up to 200 per cent. more petrol than the older methods of distilling petrol from the crude oil, and whose process the U.S.A. Government allows oil refiners within the borders of the States to use gratis, though only ten of them have adopted it so far, the Rockefeller group having a system of their own which apparently yields at least equally satisfactory results in practice, holds that either some way must be devised of increasing the available supply of petrol to meet the increased demand, or we must come to the use of fuels which have somewhat the same composition as the conventional motor spirit but which are more plentiful, or, finally, that we shall have to look to some other agent for use in the propulsion of motor cars and the operation of other hydrocarbon burning machines.

No two crude oils are the same. Of two wells in one oilfield one will yield more petrol than another. The average motor spirit content of petroleum in America is below 12 per cent. By new cracking processes Dr. Rittman holds that this can in time be brought up to 60 per cent. He says, however, that Californian and Mexican oils contain virtually no "gasoline," but can be made to do so by his fractional distillation process. He says that to-day 300,000 of the 2¼ million motor vehicles that are owned in the States are being run on "cracked gasoline," otherwise motor spirit produced from kerosene, gas-oil, and so forth. He predicts that the rise in prices will continue uninterrupted until the middle of July next, will come down in mid-October to what it is to-day at wholesale in America, and will continue that rate of decline uninterruptedly until it comes back to normal.

That, however, does not solve the problem for this country, because it is largely a transport and distributing difficulty, which will obtain until the end of the war.

The patriotism of the Asiatic Petroleum Company, vendors of Shell spirit and other brands, in refusing to raise the price of their petrol to the public at a period when, commercially and morally, they would be thoroughly entitled to do so, cannot be overpraised. But as, owing to the enormously expanded employment of utility motor vehicles the demand for petrol among the civilian community in these islands is greater than it was before the war, and as owing to its contracts with the Government for the supply of the Services the Asiatic Petroleum Company can only let its clients have one-third of their normal requirements before all this expansion took place, it follows that that quantity of spirit is not much more than a bucketful towards a bathful that is needed. Therefore, by far the majority of motorists have no option but to buy the dearer brands, the first grades of which now cost 2s. 8d. a gallon in this country and 2s. 9d. a gallon in Scotland and Ireland. Indeed, during the next few months motor fuel costs are likely to prove a greater burden to the majority of the medical profession than the new scale of car licence fees.

The freeing of transport after the war, and the throwing open of oil wells in various parts of the world that are at present idle, or the production of which cannot be brought to market, will, of course, be the main solution.

MILITARY ORTHOPAEDICS.

LIEUTENANT-COLONEL ROBERT JONES, R.A.M.C.(T.), has been appointed by the War Office Inspector of Military Orthopaedics. Lieutenant-Colonel Jones is lecturer on orthopaedic surgery in the University of Liverpool, and has been surgeon to the military orthopaedic centre at Alder Hey Military Hospital, near Liverpool, since its establishment. He is also a member of the staff of the hospital at Roehampton, near Richmond Park, for men who have lost a limb in the war.

HOSPITALS FOR MEN WHO HAVE LOST LIMBS.

It is perhaps necessary to recall that the hospital at Roehampton—the Queen Mary Auxiliary Hospital—which was established about a year ago, with the approval of the War Office and Admiralty and with the co-operation of the Greenwich and Chelsea Commissioners, is a special hospital for men who have undergone amputation of a limb. Accommodation is provided for 300 men in two houses placed at the disposal of the committee by Mr. Kenneth Wilson. The men admitted to the hospital are retained there until the artificial limbs they need have been made and adjusted under the supervision of the experienced staff of orthopaedic surgeons attached to the hospital. A hospital on similar lines and with the same recognition from the War Office is being established in Glasgow, where, we understand, the same system of supervision and construction of artificial limbs on the spot will be followed. Mr. Hayes Fisher stated the other day in the House of Commons that cases of this class were being reported at the rate of 300 a month.

THE SCOPE OF MILITARY ORTHOPAEDIC HOSPITALS.

In addition to the men who have undergone amputation, there are among those returning from abroad to military hospitals at home a large number of cases of injuries of limbs, especially of joints, varying in severity, but all more or less interfering with the ability of the wounded man to do useful work in civil life. No one will doubt that these men can in a large number of cases be greatly benefited by skilled orthopaedic treatment, and it is obvious also that this treatment should be begun as early as possible. The recognition of this by the medical department of the War Office has led to the appointment of an Inspector of Military Orthopaedics, whose duty it will be to exercise general supervision on behalf of the War Office in respect of the treatment of orthopaedic cases in the various military hospitals and sections of hospitals set apart for them, and to arrange for the transfer of suitable cases to selected centres for orthopaedic treatment. The types of cases which will come within the scope of the scheme may be classified as follows:

1. Derangements and disabilities of joints, simple and grave, including ankylosis.
2. Malunited and ununited fractures.
3. Injuries to ligaments, muscles and tendons.
4. Cases requiring tendon transplantation or other measures for irreparable destruction of nerves.
5. Nerve injuries complicated by fractures or stiffness of joint.
6. Certain complicated gunshot injuries to joints.
7. Cases requiring surgical appliances.

It may also in many cases be thought well to refer to the special orthopaedic hospitals deformities and disabilities of feet, such as hallux rigidus, hallux valgus, hammer-toes, metatarsalgia, painful heels, and flat and claw feet.

The Hammersmith Military Orthopaedic Hospital.

The Hammersmith Military Hospital will be the first of these military orthopaedic hospitals to be organized under the supervision of the Inspector of Military Orthopaedics. The buildings consist of the Hammersmith Infirmary and Workhouse, and will hold a total of about 800 men. In addition to the ordinary surgical orthopaedic service, there will be departments for treatment by massage and mechano-therapeutics, for electrical treatment, and for radiant heat, whirlpool and other forms of baths, each in their own quarters. There will also be a large and well-fitted gymnasium. The workshops of the building are large, and it is hoped to be able to fit them in such a way that all splints, surgical appliances, special boots and instruments, etc., may be made upon the premises. Special accommodation is to be made for plaster-of-Paris work, including the taking of plaster-of-Paris casts.

The staff of the hospital, apart from the administrative officers, will consist in the first place of four surgeons, a consulting neurologist, physicians in charge of the massage, electrical, and balneological departments, *x*-ray specialist, anaesthetist, gymnastic instructor, and four resident medical officers.

The British Red Cross Society has from the moment of its first suggestion offered its help to this hospital, and is assisting, both financially and through its organization, in providing the equipment required, which is necessarily elaborate.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the Committee, held in March, twenty-six cases were considered, and £207 granted to twenty of the applicants. The following is a summary of the cases relieved:

Widow, aged 46, of M.R.C.P.Irel. who practised at Norwich and died in January, 1916. Applicant left totally unprovided for with four children aged 5 to 19. The eldest has joined the army and the youngest are at school. Applicant's health is bad, and she has no friends. Voted an immediate grant of £5 pending further inquiries.

Daughter, aged 44, of M.D.Edin. who practised at Leamington and died in 1884. Applicant along with her mother managed with the aid of the Fund to get along by letting some of their rooms. The mother died recently, and the applicant was unable to manage without a little help. Voted £6.

Widow, aged 68, of M.B.Edin. who practised at Bolton and died in 1905. Applicant lost about £700 through a defaulting trustee, since dead, and her only certain income is £10 per year. One daughter, a shop assistant, lives at home, and helps as much as she can. Voted £12 in twelve instalments.

Widow, aged 62, of L.R.C.P.Irel. who practised in North London, and died in February, 1916. Her late husband was a pensioner both of the Fund and Epsom College. Applicant has no income, and at her age expects it will be difficult to find work. Voted £12 in twelve instalments, and referred to the Guild.

Widow, aged 61, of L.R.C.P.Irel. who practised at Mitcham and died in 1914, after a long illness during which all his savings were spent. Applicant is now practically dependent on the hospitality of friends. Relieved three times, £40. Voted £10.

Wife, aged 37, of M.R.C.S.Eng., is in an advanced state of tuberculosis, and her husband is in an asylum. There are three children; the eldest is being cared for by a relative, the second is in an orphanage, and the youngest living with her mother. Relieved once, £18. Voted £18 in twelve instalments, and referred to the Guild.

Daughter, aged 39, of L.R.C.P.Edin. who practised at Earlsfield and died in 1902. Applicant is blind, and is training as a masseuse. Prior to the recent death of her mother, who had a pension for life, they managed. The applicant is now dependent on a relative who has to earn her living. Help wanted for tuition fees. Voted £10.

Daughter, aged 66, of M.R.C.S.Eng. who practised at Plymstock and died in 1879. Applicant has recently lost £30 per annum through the death of a friend. Only certain income £11 per year. Lives with sister, who receives an annuity from the fund. Relieved three times, £36. Voted £12 in twelve instalments.

Daughter, aged 55, of M.R.C.S.Eng who practised at Manchester and died in 1898. Applicant managed to earn her own living, until an attack of nervous debility a few years ago necessitated her giving up her work. Only income a pension from her late employer of 6s. per week. Relieved twice, £24. Voted £12 in twelve instalments.

Daughter, aged 49, of M.D.Glas. who practised in Derbyshire and died in 1872. Applicant was left totally unprovided for, and has tried to earn a living by taking in paying guests, but owing to the war has not been successful of late. Relieved once, £10. Voted £10 in two instalments.

Widow, aged 61, of L.R.C.P.Edin. who practised at Dumfries and died in 1908. Was left unprovided for with four children, none of whom are able to help. Only income a pension of £12 per annum from another society. Relieved seven times, £68. Voted £12 in twelve instalments.

Widow, aged 58, of M.D.Edin. who practised in Cumberland and died in 1903. Left totally unprovided for, and tries to earn a living by taking in boarders, but owing to her residence being on the East Coast has been unsuccessful since the war. Has four children, all married, and unable to help. Relieved ten times, £112. Voted £12 in twelve instalments.

Daughter, aged 52, of M.R.C.S.Eng. who practised in London and died in 1895. Owing to exceedingly bad health applicant is unable to take permanent employment. Only income, £28 per year. Relieved four times, £51. Voted £12 in twelve instalments.

(To be continued.)

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SATURDAY, APRIL 15TH, 1916.

THE MAN WITH THE MUCK-RAKE.

IN the second part of *The Pilgrim's Progress* Bunyan describes how Christiana was shown a number of instructive sights in the significant rooms of the House of the Interpreter. Among these was "a room where was a man that could look no way but downwards, with a muck-rake in his hand. There stood also one over his head with a celestial crown in his hand, and proffered him that crown for his muck-rake; but the man did neither look up, nor regard, but raked to himself the straws, the small sticks, and dust of the floor."

In the recent debate in the House of Commons, dealing with the army medical organization and its alleged defects in France and elsewhere, Mr. McNeill brought forth a great collection that had been made for him of the sins of omission and commission attributed to those responsible for our medical arrangements overseas. On this occasion the wounded were left lying all night in the open; on that occasion the supply of stretchers was caused to fall lamentably short; on other occasions there had been wholesale terrible breakdowns of the medical arrangements; indeed, the entire present organization of the Army Medical Service was fundamentally unsound, and the topic was embroidered by the speaker with all the worn fal-lals and fripperies of hearsay that any scandal-monger might collect for the adornment of a scarecrow in which he was interested. Many of the officers Mr. McNeill attacked, by name or otherwise, were on service abroad, and in any case are precluded by regulations from making any reply. Their defence in the House of Commons was undertaken by Colonel Arthur Lee, parliamentary secretary to the Ministry of Munitions, who had little difficulty in disposing of most of the allegations. Colonel Lee spoke with the authority of personal familiarity with the facts; for nine months he had been Lord Kitchener's special personal representative to report to him upon the practical working of the medical services in the field. He had had unique opportunities of watching the work of the medical services at many of the places where the breakdowns were said to have occurred, and he was in a position to say at once that Mr. McNeill's harrowing tales were not in agreement with the facts he had himself observed. Mr. Tennant has made his own opinion very clear on several occasions, and only last Wednesday he declined to entertain a suggestion by Mr. McNeill to appoint a roving committee to examine into the organization and working of the Army Medical Service at home. He would not, he said, undertake action which could only have the effect of dislocating and perhaps disorganizing a most efficient piece of mechanism. In so speaking the Under-Secretary no doubt expressed also the opinion of the Secretary of State, Lord Kitchener.

Some tales and anonymous statements there are that have not been authoritatively disposed of as yet. There is the matter of the redistribution of the stretchers said to have been collected together before the battle of Loos; what if it should prove to be the case that these stretchers were directed to be returned to a central post, so as to be immediately accessible to all the divisions that might well have urgent occasion to use them? Would it have been advisable on the eve of an attack to strip several exposed divisions bare in order that one might have an unlimited supply? Again, with regard to the alleged neglect to call together the Army Medical Advisory Board to co-operate in the general superintendence of the organization of the medical service, what if it should prove to be the fact that most of the members of this Board have long been serving in an advisory capacity abroad? These are considerations that will occur to any one without any special knowledge of the facts; yet there is a tendency to discount such explanations and to accept as gospel any lurid and pessimistic account of the doings of our national services abroad. People are too ready to believe in the truth of any allegations of wholesale incompetence, or worse, made at the expense of the officers responsible for the conduct of our medical and military affairs in France, Flanders, the Mediterranean, or elsewhere. Many, like Mr. McNeill and his informants, are unduly eager to take on trust and repeat what they are told about such things, oblivious of the fundamental principle laid down once and for ever by Stareleigh, J., to the effect that what the soldier or any other man said is not evidence. The evidence is all the other way, and shows that the Army Medical Service abroad has done its work as well as is humanly possible, and has adapted itself to the varying needs of plague, pestilence, battle, murder, and the other weapons of offence used by the Central Powers with the greatest self-devotion and skill, and, what is more, with striking success. Some instances of local failure of its provisions there must have been; how could it be otherwise on a field of battle extending into three continents? But these instances will, we are firmly convinced, prove to be the rare exceptions and not the rule, as our ill-informed pessimists and grumblers, in Parliament and out, would have us believe.

But the medical tittle-tattlers have not been satisfied with trying to discredit the army medical arrangements abroad. There has been a dead set against the heads of the Army Medical Service at home, and at least one leading newspaper announced that Sir Alfred Keogh had been driven to resign. This particular insinuation was officially stated by the War Office to be "quite untrue," and the contradiction caused universal satisfaction. Sir Alfred Keogh, who very early in the war was called away from an honourable and interesting post to act as Director-General at home so that Sir Arthur Sloggett might be free to take over the direction of the medical service of the British Expeditionary Force in France, has accomplished something little short of a miracle. He has organized at home the medical service of a force ten times as numerous as the "contemptible little British army" of August, 1914. He had to accept the responsibility for the health of a multitude of raw recruits drawn from every class, unaccustomed for the most part to outdoor life or the hard work of soldiering; he had to organize a medical service to look after them out of the civilian medical profession who were ready and willing, and medically highly competent, but for the most part untrained in handling large bodies of men under military conditions. He has succeeded in organizing the medical work for the recruits, while at the same time meeting every demand from the army in France, in the Mediterranean, and now in Mesopotamia. He could not have succeeded without the loyal support of his profession. He has had it, but he would not have

had it if he had not deserved it. The good sense of the true heart of the medical profession has brushed aside the carping criticisms of backbiters; it has seen defects, but it has seen readiness to remedy them, to try all things, and hold fast that which is good. In the immense effort which Great Britain has made to become a great military power Sir Alfred Keogh is one of the outstanding figures. No man is indispensable and the Army Medical Service has many able officers, but as long as Sir Alfred Keogh feels able to stick to his post his profession want him there.

The man with the muck-rake, no doubt, serves a useful purpose at times, as did the drunken Helot in his day; we are glad to know that his investigation of the doings of the Army Medical Service has brought to light nothing more than what Colonel Lee happily described as a *nidus equinus*, a mare's nest constructed, no doubt, of the straws, the small sticks, and the dust of the floor detailed by John Bunyan. In conclusion, one may advantageously quote this author further: "Then said Christiana, Oh, deliver me from this muck-rake!" And so say all of us.

THE FOURTH WAR BUDGET.

WAR finance has hitherto necessitated half-yearly Budgets, and the Chancellor in his recent speech made it clear that a second Finance Act for 1916–17 was already regarded as inevitable. It is therefore natural that the taxpayer should look upon the present proposals with rather more apprehension than if his contributions to the Exchequer for the current year were thereby definitely fixed. It is a remarkable proof of the readiness of the country to bear the pecuniary burdens of the war that, although there is not any likelihood that the high-water mark of taxation for the year has been reached, the Budget has been received with all but universal approval, and such hostile criticism as has been heard is limited almost entirely to the more novel but less productive portions of the Chancellor's proposals.

Those taxes which are now embodied in the Finance (New Duties) Bill, such as the match tax, the railway travel tax, and the entertainment tax, are being attacked with some vigour, and with a not inconsiderable degree of plausibility, but at present it seems probable that in general they will hold good, though no doubt with minor modifications—as, for instance, with an exemption of railway season tickets from the new taxes. But Governments are frequently prepared to jettison unpopular taxes if by that means other and more lucrative portions of the financial cargo can be more easily saved; and it may be that the present attempt to "broaden the basis of taxation" may meet with less success than seems likely at the present moment. These new duties, as distinct from the increases in the old taxes, form only a small portion of the estimated yield of the whole, and it is clear that in any case by far the larger portion of the war taxation will be levied upon the upper and middle classes. The lowering of the exemption limit for income tax and the quarterly collection of the duties from wage earners was provided for in the second Finance Act of 1915, but is only now on the point of coming into operation, and it will not be possible to ascertain the financial result with any degree of accuracy for some time to come. For that reason, as well as on account of the administrative difficulties and expense, it would seem that any further reduction of the exemption limit is at present unlikely, though the political and economic advantages of such a course are generally admitted.

Coming to a consideration of the actual proposals, it has to be borne in mind that the income tax rates laid down in the last Finance Act never came into full force. That Act provided for an increase of 40 per cent. on the then existing rates, with a relieving clause restricting the rise for 1915–16 to 20 per cent. only. Consequently the minimum and maximum rates for that year were 1s. 9⅗d. and 3s. respectively, and are now raised to 2s. 3d. and 5s., and the corresponding increases are therefore 5⅖d. and 2s., and not 1⅘d. and 1s. 6d., as several of the daily papers originally suggested. One example will serve to show the effect of the gradual rise in the rates: On an income of £1,000, half earned and half unearned, the tax payable at pre-war rates would have been £48; the effect of the various Acts has been to raise that contribution to £67 for 1914–15, to £120 for 1915–16, and to £162 10s. for 1916–17, but the last word in respect of this year's tax has probably not yet been spoken. How far income tax can be paid at the proposed rates without trenching on capital is a question that only future investigation can decide; certainly it cannot be done without severe personal sacrifice.

The most interesting feature of the income-tax rates as they will now be applied is the extended graduation of the "unearned income" rates. All tax paid by way of deduction at the source will apparently be at the full rate of 5s. in the £, and a very large number of taxpayers will for the first time find it necessary to prepare statements of total income in order to obtain the relief to which they will be entitled. Taxation at the source—alternatively referred to as the "sheet anchor" or the "fetish" of our income-tax system—has obvious advantages from the Revenue standpoint, and will no doubt be given up only with great reluctance, but the legislation of recent years, by requiring practically every person to render declarations of total income, has to a considerable extent weakened the arguments for its retention. When the promised revision and simplification of the tax is carried out, we may, perhaps, see this principle discarded in favour of a system under which each person would render a statement of his income and be taxed thereon on one charge, payable in instalments. Such a method of assessment is now being put into force in France, our Allies having adopted a system of logical simplicity more consonant with the genius of the French nation than the cumbrous edifice which has been laid on the foundation of the British readiness to accept a compromise as necessarily containing the best of both alternatives.

One advantage of the French system is that it is more flexible in the matter of allowances, as exhibited, for instance, in the deduction it makes for wives and dependants, as well as for children. In the case of our own system the only parallel allowance is in respect of children, which is fixed at £25 (comparing unfavourably with the more generous 1,000 francs in the French system), and which, unlike the French equivalent, is limited to persons whose total income does not exceed £500. This restriction seems to us no longer defensible, either in theory or from an administrative point of view. To-day all classes of society realize the importance of education more than ever before, and as the rates of tax have been so closely graduated, it would seem only reasonable that the relief should be extended and graduated on similar lines. So far as the practical difficulty of granting such relief is concerned, we suggest that it is being solved automatically, as more and more taxpayers are brought by extended graduation into contact with the Revenue officials in connexion with their own payments or repayments.

General practitioners must regard with some dismay the further increase in locomotion costs, which will be caused by the rise in the rates of licence duties on motor cars. The medical profession is in a peculiar position in this matter, and the British Medical Association made representations to the Chancellor asking for exceptional treatment of medical motorists in respect of the car and cycle duty. In view of the fact that the profession has already suffered hardship through the previous increase in these duties and also in the petrol tax, we are glad that the representations have met with a considerable measure of success. In two other cases of hardship, namely, that occurring through the double taxation of colonial incomes and of the application of the new rates to officers in the army and navy, the Chancellor announced that he proposed to leave these "vexed questions" where they stand now, and we suggest that the course adopted in those cases might with at least equal justice be followed in connexion with the increased licences so far as medical practitioners are concerned. Motor taxes have undeniably a flavour of the sumptuary law about them, at any rate in the popular mind, and so far as motoring may be for pleasure, few would be at pains to dispute the argument. But such reasons have clearly no application to the motor car kept by a practitioner to enable him to reach his patients with the minimum of delay, and any alteration in the tax payable in such cases should be rather in the direction of further relief than in that of increased taxation.

The medical profession has been met to a certain extent in this matter, and we are thus able to endorse the general opinion that on the whole the taxes imposed are as fairly distributed as possible, and that the Chancellor is to be congratulated on an exhibition of his own courage, of the sanity of his advisers, and of the self-sacrificing spirit of the whole nation.

PSEUDO-DARWINISM AND WAR.

Of all the misunderstandings and misrepresentations to which genius has ever been subject, perhaps those concerning Darwin have been the most tragic, at any rate, in their results for his own country and for the world at large. They afford a striking example of the danger pertaining to the coining of phrases which seem to sum up in a few words the discoveries of a lifetime but too readily catch popular imagination and lead it astray. In the opening paragraph of his discussion of the "struggle for existence"[1] Darwin carefully emphasized the point that he used the phrase "in a *large and metaphorical* sense, including dependence of one being upon another, and including (which is more important) not only the life of the individual, but success in leaving progeny." This plain statement of a vital qualification has been almost universally ignored by popular exponents or critics of the Darwinian hypothesis, who have stubbornly adhered to a narrow and literal interpretation of the term in question as well as of those others—"natural selection" and "survival of the fittest"—in which the great naturalist loosely summarized his main conclusions. In Germany the prestige and influence of Darwin have been great, but he has been fatally misunderstood. The sanction of his great name has been abused in the dissemination of heresies from which he himself would have recoiled in horror and contempt. In this respect, while Nietzsche and von Treitschke have not been guiltless, the most blatant sinner has been General Bernhardi, who in his widely read books assumed the authority of Darwin for his qualification of war as a "biological necessity" and the basis of all healthy development. It so happens that Darwin, as Sir James Crichton-Browne points out in a recently published address,[2] explicitly condemned human warfare as dysgenic and pathological. On the face of it a nation is not a species, and, as Sir Ray Lankester neatly puts it, "You do not see fir trees advancing against beech trees, bears against wolves, vultures against eagles," in big well-drilled battalions and brigades. Sir James Crichton-Browne's address deserves careful study, not only for its crushing refutation of Bernhardi's fallacies, but for its interesting suggestion of extended importance for the factor of mutation in the cosmic process. Postulating a teleological origin and guidance of evolutionary changes, the author identifies as "four tremendous mutations, discontinuous, inexplicable by any naturalistic theory," and "revealing directivity," the transitions (1) from the physical to the vital, (2) from the vital to the mental, (3) from the mental to the moral, and (4) from the moral to the religious or spiritual spheres of action. On the vexed question of the relation of brain and mind, Sir James favours the transmissive theory rather than that which regards thought as the product of cerebration. "So far," he says, "are we from having parallelism between mental and physical states that it would be more correct to represent them as two immense and independent spheres which to a small extent impinge upon and intersect each other."

[1] *The Origin of Species*, Chapter III.

HORRORS OF A GERMAN PRISON CAMP.

In the BRITISH MEDICAL JOURNAL of March 18th, p. 421, reference was made to the experiences of Dr. François Léonetti during an epidemic of typhus in the prison camp at Langensalza in the early part of 1915. A still more damning record of German brutality is to be found in a report just issued by the Foreign Office of a Government Committee of which Mr. Justice Younger was chairman, on the camp at Wittenberg during the epidemic of typhus which raged there in the first six months of last year. The report is based upon information supplied by Major Priestley and Captains Vidal and Lauder, R.A.M.C., and other prisoners recently released. On the outbreak of the epidemic the German staff, military and medical, hastily fled, and six British doctors, Major Fry, Major Priestley, and Captains Sutcliffe, Field, Vidal, and Lauder, who had been detained at Halle in defiance of the Geneva Convention, were sent to Wittenberg. They found the conditions in the compounds almost indescribably horrible. The sick were practically left to their fate without attendance, medicine, or dressings. As a consequence of this neglect several cases of gangrene of the feet occurred, and one man had to undergo amputation of both legs. The only precautions taken by the Germans were to prevent the spread of the epidemic to themselves by isolating the prisoners from the outside world. There were between 250 and 300 cases among the British prisoners, of whom 60 died. The mortality among the French and Russians was much greater. The medical officers and the nursing orderlies suffered most. Major Fry and Captains Sutcliffe and Field died of the disease. The Committee has no doubt that "the conditions to which the camp authorities had reduced the camp and the prisoners they had abandoned was directly responsible for the deaths of these devoted men." Captain Lauder fell ill on March 7th, but recovered; when convalescent he resumed duty. The report pays a glowing tribute to the work of the English doctors and orderlies. Only once during the whole course of the epidemic did Dr. Aschenbach, the German medical officer in charge, enter the hospital or even the camp, and that visit was of the most perfunctory kind. His callousness is illustrated by an incident related by Captain Lauder. Shortly after their arrival at the camp Major Fry asked him for some medical requisite that was urgently needed.

[2] *Bernhardi and Creation: A New Theory of Evolution.* By Sir James Crichton-Browne, M.D., D.Sc., LL.D., F.R.S. Glasgow: James Maclehose and Sons. 1916. (Cr. 8vo, pp. 72. 1s. net.)

Dr. Aschenbach, who was cautiously standing outside the entanglements, refused the request and turned away with the words, "Schweine Englaender." And this is the man whom his Sovereign delights to honour with an Iron Cross! Perhaps it has been fittingly bestowed, for this "decoration," which used to be a badge of honour, has, since its wholesale conferment on baby slayers, become a symbol of infamy. The conditions of the Wittenberg camp are said to have improved, largely owing to the representations of Mr. Gerard, the American Ambassador, and measures have been taken to prevent a recurrence of the epidemic. The commandant has been removed, but Dr. Aschenbach remains in charge, and as long as he is left in authority we can feel no assurance that sick prisoners will be treated with any regard to humanity. Perhaps, like the commandant at the Cassel camp, he feels that he is making war in his own way by letting the prisoners die. The report has sent a thrill of horror through this country, and we welcome Lord Robert Cecil's announcement that steps are being taken "to bring to the notice of all civilized States these shocking revelations of cowardice and brutality."

WAR SURGERY, OLD AND NEW.

In an address delivered before the Philadelphia County Medical Society Dr. William W. Keen, Emeritus Professor of Surgery in Jefferson Medical College, gave an interesting account of the surgery of the American civil war in which he did notable service. Dressings then consisted of simple ointments, often only cold unboiled water, followed later by constant poulticing to produce an abundant flow of pus. The supply of ether and chloroform was plentiful. The hypodermic syringe was not in general use even towards the end of the civil war. For the examination of wounds surgeons had only the ordinary probe, which, being unsterilized, was often a means of introducing bacilli as well as detecting bullets. Surgeons were in blissful ignorance of the fact that the sponges they used harboured multitudes of germs which infected every wound they touched. "If one fell on the floor it was squeezed two or three times in ordinary water and used at once." With knives, saws, forceps, and needles, these appliances made up the whole armamentarium of the surgeon in the civil war. The haemostatic forceps was unknown; each artery was caught and held up with a tenaculum and tied with undisinfected silk. Meantime other arteries continued to spout blood until they could be tied one by one. Secondary haemorrhage was common. Keen was called to five cases in one night after the battle of Gettysburg. In all the years since 1876, when he adopted Lister's antiseptic method, he has not seen five other cases of this occurrence. The Red Cross, the trained nurse, and the motor ambulance—which have all come into existence since the civil war—have rendered inestimable service, but the greatest advance has been the discovery of the part played by sepsis. More than once Dr. Keen saw his teacher, the famous S. D. Gross, "give a last fine touch to his knife on his boot—even on the sole, and then at once use it from the first cut to the last." When threading a needle, all pointed the silk by wetting it with germ-laden saliva and rolling it between germ-laden fingers. Practically every serious wound suppurated. Of over 2,800 cases of pyaemia during the civil war only seventy-one ended favourably; less than eleven in every hundred cases of lockjaw recovered; the mortality from trephining was 61 per cent. Dr. Keen says that he has never seen a case of hospital gangrene since the civil war. In the present war the danger of infection of wounds by the germs in a soil which has been under cultivation for centuries is increased by the conditions of trench warfare. But some of the worst scourges have been abated, and it is reasonable to hope for increasing success as knowledge grows. That military surgery is, in Dr. Keen's opinion, undergoing transformation is shown by the very title of his address. He calls it "Old and New War Surgery," and it was delivered on March 24th, 1915. Already the "new" of a year ago has to a considerable extent become the "old." New conditions of warfare have brought new experiences which have led investigators to seek for new methods of treatment. These are on their trial, and are so recent that they are not mentioned by Dr. Keen.

THE CONTROL OF MALARIA.

A CONFERENCE, held in Sydney on January 21st to consider the best means of dealing with cases of malaria in soldiers arriving from New Guinea and other malarial regions in the Pacific, came to the conclusion (according to the *Medical Journal of Australia*) that anopheline mosquitos are not sufficiently prevalent in the greater part of the Commonwealth to make the risk of the spread of the disease from returned soldiers a serious one. It was considered that the epidemic spread of malaria is improbable, except in Overland Corner in South Australia, and in those areas where the disease already exists. It was recommended that all discharged soldiers now in Australia who have been infected should be concentrated in one place in order to go through a course of treatment. The United States Public Health Service, as the result of an investigation as to the prevalence of malaria in the South, has found that in certain sections 40 per cent. of the inhabitants are infected. This estimate is based on 204,881 cases reported during 1914. The infection-rate among the white population was found to be more than 8 per cent., and among the coloured 20 per cent. A great reduction in the prevalence of the disease has been effected at thirty-four places in nearly every State in the South. In some the incidence was reduced from 15 per cent. in 1914 to less than 4 or 5 per cent. in 1915. Over 2,000 anopheline mosquitos in malarious districts were dissected during the early spring months without a single infected insect being found; not until May 15th, 1915, was the first parasite in the body of a mosquito discovered. The Public Health Service therefore concludes that mosquitos in the latitude of the Southern States do not ordinarily carry the infection through the winter. This discovery, it is held, indicates that protection may be secured by treating human carriers with quinine before the middle of May, thus preventing infection from chronic sufferers reaching mosquitos and being transmitted by them to other persons. It is recognized that the eradication of the disease depends on the destruction of the breeding places of the mosquito, and a campaign with that object is recommended.

THE PSYCHOLOGY OF THE WOUNDED SOLDIER.

PROFESSOR FERRARI, director of the lunatic asylum of Imola, who has had opportunities of talking with hundreds of soldiers wounded in the battles on the Isonzo,[1] says that he was struck by the extreme modesty of the men, who were disinclined to speak of the time spent by them in the trenches or of what they had done there. Ferrari traces this reserve to a sense of honesty which makes them feel they are less worthy of admiration than their comrades who have given their lives. In the matter of projectiles the wounded soldier, he says, has some curious preferences. The ideal is the rifle bullet; next comes the hand grenade; then shrapnel; lastly, the airplane bomb. The last is despised because it is not necessary to be a soldier to be hit by it. The bullet has something personal about it as coming from an enemy who might himself have been shot by the wounded man; it is thus the symbol of a kind of duel with equal weapons, if not under the same conditions. Ferrari's observations go to show that the mental state of the soldier during the various phases of the campaign undergoes marked modifications. While he is waiting to be sent forward to the firing line an *esprit de corps* is developed which suppresses or attenuates individual

[1] *Policlinico (sezione pratica)*, November 18th.

character and brings all to a higher moral level. The honour of a man's birthplace, regiment, and branch of the service has to be maintained at whatever cost; nothing else counts. It is in the firing line, however, that the new spirit is chiefly formed. In the "hell" of the trenches the men are "transformed" by the feeling that a tremendous task has to be accomplished and by the disturbance of all the normal conditions of life—the narrow space in which they are confined and the cramped position in which they move and have their being. Very few admitted that they felt fear; the absolute concentration in the complex act to be done made them insensible to everything else, so that a quiet and peaceful man who till yesterday would not have raised his hand against any one, now from his trench seeks with careful deliberation to kill any enemy within range. Very few do this with any feeling of hatred—at least, Ferrari adds significantly, at first; it is rather a game of craft, the inborn instinct of the chase. The enthusiasm with which the order to attack is received is partly due to a feeling of relief at getting out of a hole where one is under shell fire to which no effective reply can be made. Men hit in such circumstances are stopped instantly, while all their faculties are at the highest tension; this sudden arrest gives rise to a psycho-physical state which manifests itself in a tendency to speak of the assault in which they took part as soon as they can and to take no interest in anything that does not relate to it. Together with this there is a desire to carry on the fight in order to settle accounts with the enemy.

WASSERMANN REACTION IN MILK.

K. K. MORDWINOW[1] has recently reported the results of a series of examinations of human milk for the Wassermann reaction. He states that his results are in agreement with those of Tomsen, Bate, and others, and show that the reaction with human milk gives quite satisfactory results. The specific antibodies reach the milk from the blood at a very early stage. Mordwinow has succeeded in getting a positive Wassermann reaction on the second day after delivery. The action persists during lactation; he obtained a positive reaction as late as fifteen months after delivery Cases in which the milk gave a negative reaction and the blood a positive were rare; this condition was observed in one case only out of twenty. In three cases he had a stronger positive reaction with milk than with blood, and the infant also gave a positive reaction. He points out that the milk reaction may be of particular value in cases in which a wet-nurse refuses a blood examination.

TUNGSTEN AS A SOURCE OF ULTRA-VIOLET RAYS.

MORE than one form of open tungsten arc has already been used for obtaining ultra-violet radiation, but, although rich in the quality of its ray output, the sputtering character of the flame and the continual attention which it demands militate against its hospital use. The enclosed tungsten arc is a new lamp, recently introduced commercially, which incorporates a very ingenious method of striking the arc between a special filament and a small ball of tungsten; and to adapt it to this special purpose it has been constructed in a quartz bulb. The lamp gives a good ultra-violet spectrum, though not the very short wave lengths obtainable with the open arc. A paper on the use of the lamp for therapeutic purposes was read by Mr. B. H. Morphy and Mr. S. R. Mullard at the Röntgen Society on April 4th. It was urged that its greater convenience compensated for any disadvantage. If the lamp is overrun—thereby, of course, diminishing its life—the rays obtained extend much further into the ultra-violet region. In the course of the discussion Major Wilson, of the Canadian Medical Service, said that ultra-violet light was being used extensively in the base hospitals for the treatment of wounds, and he had himself made some experiments with a view to getting ultra-violet radiation of much shorter wave-length than hitherto obtained by striking an arc in tungsten vapour.

[1] *Medizinskoye Obesreniye*, 1915, N. 13-17.

WE regret to record the death from pneumonia, on April 8th, of Mr. Arthur E. J. Barker, Professor of Surgery, University College, London, who has been serving as consulting surgeon to the Southern Command, with the rank of lieutenant-colonel.

Medical Notes in Parliament.

War.

The Number of Medical Officers in the Navy and Army.—In reply to questions by Mr. Aneurin Williams, the Secretary to the Admiralty stated, on April 6th, that the number of qualified medical men now employed in connexion with the navy was 1,118. This did not include part-time medical men—namely, Admiralty surgeons and agents. Mr. Tennant said, on April 10th, that there were 10,659 medical men holding commissions in the army at the present time. In reply to Sir J. Lonsdale, on April 12th, Mr. Tennant stated that medical men between the ages of 45 and 55 were being employed as commissioned officers for general service in the United Kingdom. Doctors over 55 might offer their services for local employment to the General Officer Commanding-in-Chief of the Command in which they were living, or in which they desired to do duty with troops. The policy should be that the medical men of more advanced years rendered the country the better service by undertaking the care of the civil population, and thus setting free those of military age who were physically fit for duty at home or abroad.

Territorial Medical Officers.—Mr. Lynch, on April 10th, asked whether there was any discontent amongst Territorial medical officers, especially those attached to regiments; and whether the appointment of a Territorial medical officer of position and long service as such on the staff of the Director-General at the War Office would be considered, and also the insertion in the *Army List* of a seniority list of the officers of the Territorial medical service. Mr. Tennant said: "The Territorial regimental medical officers joined the service for the specific purpose of doing the duties in which they are now engaged, and it is unlikely that they would be discontented if called upon in time of war to assume responsibilities for which they engaged in time of peace. Promotion of regimental medical officers is regulated by time service. Other Territorial Force medical officers are promoted by selection and seniority in their units. In these circumstances there is no need for a seniority list. The Director-General has an officer on his staff who has considerable experience of the Territorial Force." Mr. Lynch also asked whether a lieutenant-colonel of the Territorial medical service of many years' service received the same remuneration as a temporary lieutenant-colonel appointed since the commencement of the war; if so, whether this was in accordance with the spirit of the War Office undertaking that such officers should receive the pay of the corresponding rank as laid down by the Pay Warrant, 1914, for officers of the Royal Army Medical Corps; whether in the case of such officers their experience and their services were held to make them more valuable; and whether the higher rate of pay of 35s. laid down in the warrant for lieutenant-colonels of the Royal Army Medical Corps would be given them after five years' service in the ranks. Mr. Forster replied: Yes, sir; these officers are treated in accordance with the undertaking referred to. Unmobilized service in the Territorial Force cannot be held to count towards the higher rate of pay as if it were full-pay service in the regular army. If any Territorial Force lieutenant-colonels give the necessary amount of embodied service, they will be entitled to the higher rate of pay.

Army Medical Administration.—On April 12th Mr. R. McNeill asked the Under Secretary of State for War whether he would appoint an independent committee to examine into and report on the organization and working

of the Army Medical Service at home and abroad. Mr. Tennant replied that he could not undertake action which could only have the effect of dislocating and perhaps disorganizing a most efficient piece of mechanism.

Artificial Limbs.—Mr. W. Thorne, who, on April 6th, asked a question as to the supply of artificial limbs, suggested that the provision of such limbs and the payments for the maintenance of the men in hospital while the limbs were being supplied and fitted were inadequate, that voluntary subscriptions were being solicited, and that boards of guardians had passed resolutions to the effect that all such expenses should be a national charge. The Financial Secretary to the War Office said that artificial limbs were supplied in kind at Government expense, and the recipients fully maintained in hospital at public expense while they were being fitted. Nothing was known as to resolutions by boards of guardians to the effect mentioned.

Motor Operating Theatres.—On April 10th Mr. Lynch asked the Under Secretary of State for War for statistics of the number of cases of compound fracture in which life or limb had been sacrificed owing to sepsis; and whether, with a view of reducing the mortality, a system of motor operating theatres had been established at the front. Mr. Tennant replied that the War Office was not in possession of the statistics mentioned, and referred Mr. Lynch to answers given him on July 26th and February 29th. In the earlier answer (BRITISH MEDICAL JOURNAL, July 31st, 1915, p. 188) Mr. Tennant said that the question of sending motor operating theatres to the front had been carefully considered in communication with the expert advisers overseas, with the result that it had been decided not to send any motor operating theatres, as the opinion of the expert advisers on the spot was that their provision would not diminish the rate of mortality of abdominal wounds. The question put by Mr. Lynch on February 29th was as to whether, by the provision of movable hospitals, or by a closely connected series of hospitals within a short distance of the firing line, operations on the severely wounded might be undertaken with the least possible delay. Mr. Tennant said that use had been made of this description of hospital for many months, and in his answer on April 10th explained that he was referring to the casualty clearing stations, which are as near the firing line as is safe. These clearing stations, he added, are essentially mobile, as they accompany divisions in an advance.

Medical Examination of Recruits.—The question of giving facilities for the medical examination of men before they are actually called up was raised on April 10th by Captain Douglas Hall. Mr. Tennant said men might, if they so desired, be examined by a medical board previously to being called up for service, or, in order that they might have time to settle their affairs, ten days' leave might be given to them. Arrangements were being made for such an examination some time in advance. The War Office could not institute a larger number of medical boards than had already been formed, owing to the fact that there was not a sufficient number of skilled medical officers to carry them out. With regard to the special case of the Isle of Wight, the request of the local recruiting authorities had been approved for the carrying out of the preliminary medical examination of recruits by the medical officer at Parkhurst so long as he was a regular officer. All men had to go before the medical boards unless rejected at the preliminary examination at the recruiting office.

Soldiers and Sailors: Sanatorium Grants.—In reply to Sir Henry Craik, the Financial Secretary to the Treasury said, on April 11th, that it was proposed to entrust to the Statutory Committee on Soldiers' and Sailors' Pensions the duty of providing treatment in sanatoriums of tuberculous cases among soldiers and sailors. The normal practice was that the non-employed soldier or civilian was dealt with by the local authorities, but certain of them had no institution. Pending the establishment of the statutory committees, grants were made out of public funds, but in future the committees would undertake this work.

Invalid Prisoners in Switzerland.—Mr. Tennant stated, on April 11th, that the arrangements had been agreed to as to the internment of British and German invalid prisoners of war in Switzerland, on the principle that British and German prisoners should equally be interned in Switzerland, the one as it were in exchange for the other, though it was not really an exchange. The French Government had granted permission for the passage of German prisoners from the United Kingdom through their territory, and the necessary details for giving effect to the scheme were being worked out.

Health of Munition Workers.—In reply to Mr. Lewis Haslam, on April 10th, who asked questions as to whether the recommendations of the Health of Munition Workers Committee were being carried out, the Parliamentary Secretary to the Ministry of Munitions (Dr. Addison) said that the precautions with regard to ventilation and mechanical devices to ensure workers against poisonous fumes were being enforced by the inspectors of the Factory Department of the Home Office as a part of their general administration. Mr. Haslam also asked whether the Committee had reported that the health and efficiency of munition workers had been detrimentally affected by too prolonged hours of work, and had pointed out that continuous overtime not only tended to ruin the health of the worker of average powers of endurance, but also was excessively costly and prejudicial to economical and effective production; and, finally, whether compulsory powers were being taken to prevent the continuance of the evils indicated. Dr. Addison, in reply, stated that the exercise of compulsory powers had hitherto not been found necessary, and referred to a written reply of Mr. Lloyd George on April 4th, in which he stated as follows: "The hours of work of women and young persons in controlled establishments, as in other factories and workshops, are limited by the Factory Acts and Regulations made by the Home Office thereunder, subject only to exceptions by general or special order of the Home Office under paragraph 150 of the Factory Act, 1901. The Ministry of Munitions are in constant and regular communication with the Home Office as to the extent to which and circumstances in which such orders of exemption should be granted with a view to giving effect to the recommendations of the Health of Munition Workers Committee. No special instructions regulating the hours of male adult workers have been issued by the Ministry of Munitions, but steps are being taken to reduce Sunday labour and to secure that adequate weekly rest periods are provided."

Motor Car and Cycle Licences.—On April 12th Mr. McKenna said, in reply to Sir C. Kinloch-Cooke, that the existing concession under which registered medical practitioners paid only half rates on licences for motor cars and motor cycles would extend to the new duties. In reply to a question, on April 6th, the Chancellor of the Exchequer said that it was not proposed to alter the date on which motor car licence duty would be payable, but a supplementary licence for the remainder of the current calendar year would have to be taken out before June 30th or August 15th for cars, etc., which it was proposed to use after these dates. The new duties would, like the existing duties, be collected by the local authorities on behalf of the Exchequer. In reply to a supplementary question, Mr. McKenna said that he imagined that if a car were not used the local authority would insist upon the surrender of the number of the car in order to prevent it being used. In reply to Mr. Rowlands, on April 10th, Mr. McKenna said that he was considering whether exemption from duty could not be granted for cars used exclusively by the owners at their own expense for Red Cross, special constabulary, Voluntary Aid Detachment, and other voluntary work for the Government.

Notification Fees.

The Local Government (Emergency Provisions) Bill was considered in Committee in the House of Commons on April 11th. On Clause 5, provisions as to notification of diseases, which proposed to reduce the fee to be paid to a medical practitioner for notification in respect of a case of infectious disease occurring in his private practice to 1s., Sir Philip Magnus moved an amendment to provide that the fee remain 2s. 6d. except in the case of measles. He said that the mere fact that this reduction had been recommended by the Retrenchment Committee did not seem to him, or to a large number of members of the medical profession, a sufficient reason for reducing the fee hitherto received. No class in the country had made greater sacrifices than members of the medical profession. A large number had given up incomes of considerable amount to join the R.A.M.C. for a very small salary for a long period, while other practitioners were doing work at hospitals for which they got practically nothing. Sir Philip Magnus referred to the deputation consisting of the Chairman of Representative Meetings, the Chairman of the Parliamentary Subcommittee of the Medico-Political Committee, and the Medical Secretary of the British Medical Association, to the Parliamentary Secretary of the Local Government Board on April 6th on the subject, and recalled Mr. Hayes Fisher's promise then given to confer with the President of the Local Government Board. Sir Philip Magnus asked what answer the President had given. Members of the medical profession, he said, regarded the statement made on the second reading of the bill, that the notification of diseases involved nothing more than clerical work, as a slur upon the manner in which they investigated these diseases before notification was made. A doctor was required to supply a diagnosis, and for such a certificate the fee of 1s., as compared with the 2s. 6d. hitherto paid, was not sufficient remuneration. The practice of economy where skilled professional opinion was required was very unwise. He believed that the whole amount of the saving would be very small. Measles might be distinguished from other infectious diseases on account of the greater ease with which it was diagnosed, and it was for this reason excepted in the amendment he had proposed. Mr. Hayes Fisher said that he desired to join in

the eulogy passed upon medical men for the splendid work they were doing, not only abroad, but at home, and he deeply regretted that any words he had used should have seemed to cast any slur upon the medical profession. He thought, however, that no words of his could be so interpreted. The proposed reduction did not originate with the Local Government Board, but with the Retrenchment Committee; it was that Committee which said that almost the whole of the work involved was clerical. For his own part he recognized that much more than clerical labour was involved. There must be, in the first place, a complete diagnosis, and he gave every credit to the doctors for doing their work fully and admirably. But the diagnosis had to be made for the patient, and the doctor could not know how to treat a patient until he had made the diagnosis. It was not until he had fully ascertained what the disease was that the Act called upon him to notify it. The filling up of a certificate was a simple form, and the Retrenchment Committee had come to the conclusion that for that 1s. was sufficient, at all events, during the period of the war. No doubt the fact that the list of diseases to be notified was growing had been taken into account. The deputation from the British Medical Association admitted that 1s. would be sufficient for notifying measles, but urged that 2s. 6d. should be retained for all other diseases. Mr. Hayes Fisher said that he had consulted the President of the Local Government Board as to whether there was any ground for differentiating diseases. The departmental authorities consulted said that they could not draw any clear line of distinction between the medical responsibilities for notifying measles and any other infectious diseases. The medical advisers of the Board had also been consulted, and had said they could not differentiate between different diseases, and that if 1s. was sufficient for the notification of measles, then 1s. was sufficient for drawing up a simple form with regard to other diseases notified. He could not hold out any hope that the Government would forego the clause; it must be retained, and the doctors—at all events for the period of the war—would, he hoped, accept the 1s. instead of 2s. 6d. Mr. J. Samuel made an appeal for a reconsideration of this decision, holding that the reduction was false economy. It must tend to produce very great discouragement among doctors, even though the reduction was made in war time. Mr. Boyton said that the statement by Mr. Hayes Fisher would be very unsatisfactory to the medical profession. The increase of work thrown upon the medical profession owing to recent legislation, the multiplication of forms and returns, had rendered their professional life onerous, and their labours constant and anxious They were called upon to make many sorts of returns for the small fee of 2s. 6d., and it was not too much to give for such work. He could not understand the policy of the Local Government Board in reducing the fee, especially at a time when the medical profession was making greater sacrifice than any other body of people in the country. Sir Philip Magnus said it was much to be regretted that the opinion of the medical advisers of the Local Government Board should differ from that of the bulk of the medical profession, as expressed by the British Medical Association, and he hoped that the view expressed in the letter of that Association to the President of the Local Government Board would be accepted by him. He appealed to Mr. Hayes Fisher to consult the President once more and see whether some compromise could not be made which would be likely to satisfy the majority of the medical practitioners still left in the country. The amendment was negatived without a division. After a drafting amendment, moved by Mr. Hayes Fisher, had been accepted, Mr. Samuel, on the question that the clause as amended stand part of the bill, appealed for a reconsideration of the matter before the report stage. He considered that the Local Government Board had made a grave error. Sir Philip Magnus also appealed to Mr. Hayes Fisher to consult again with the President of the Local Government Board. Mr. Hayes Fisher said that he would report that there was a difference of opinion in this matter, but, judging by the view expressed by the President when he conversed with him on the subject not long ago, he could not hope that the President would change his mind. The clause was agreed to without a division, and, after further progress, the proceedings were postponed at the appointed hour.

Infantile Mortality.—The President of the Local Government Board gave the following information, in reply to a question by Mr. King, on April 5th: "The latest figures for 1915 show that the death-rate under 1 year of age amounted to 110 per 1,000 births, as compared with 115 per 1,000 births in the previous ten years and 105 in the year 1914 and 108 in the year 1913. In spite of the general restriction of local expenditure, active steps are being taken by practically all the larger local sanitary authorities to lessen infant mortality and to promote the welfare of infants generally. A large number of local authorities have appointed health visitors, who advise mothers as to the care of their infants; in most of the large towns maternity and child welfare centres have been established, at which expectant and nursing mothers receive medical advice and minor treatment, and in many places arrangements have been made for the provision of midwives and of doctors for the confinement of necessitous women and for other assistance for expectant and nursing mothers and children. My department have distributed a grant of about £41,000 in aid of maternity and child-welfare work during the financial year which has just ended."

Death Certificates.—In a written reply to Mr. King, on April 6th, the President of the Local Government Board said that he could not at present undertake to introduce legislation relating to the confidential certification of the cause of death as recommended in the report of the Royal Commission on Venereal Diseases.

Medical Treatment of School Children in Ireland.—In a written reply to Mr. V. Kennedy, on April 6th, the Chief Secretary for Ireland stated that the Commissioners of National Education had in June, 1914, prepared a scheme for the utilization of the grant towards the medical treatment of school children as apart from dental treatment, but the Treasury in August, 1914, had intimated that it could not approve the scheme. The total expenditure from the vote on this service between April 1st, 1912, when the grant was first made available, and March 31st, 1916, was £2,111, the whole being in respect of dental treatment. The grant was available towards meeting the cost of the medical treatment of school children and services ancillary thereto, and could be availed of only in respect of schemes approved by the Lord Lieutenant. Payment could not exceed one-half of the certified amount of the expenditure in the case of any scheme. The condition that one-half of the expenditure should be provided from local sources was prescribed by the Treasury when the grant was first placed on the Estimates.

Venereal Diseases: Examination of Prisoners.—In reply to Mr. King the Chief Secretary for Ireland said that, so far as the General Prisons Board for Ireland was concerned, no difficulty would be made in giving effect to the recommendation of the Royal Commission on Venereal Diseases that where the medical officer of a prison considers that an examination of a woman is necessary it should be made by a woman doctor. In the only prison that is wholly occupied by women prisoners in Ireland the medical officer is a woman.

German Scientists.—In reply to Captain Bathurst, on April 6th, the Prime Minister said that the Government had no power to intervene in cases of the retention in the list of members of the Royal Society and other learned societies in Great Britain of German scientists, including some who had been instrumental in concocting poison gases.

Paper.—In reply to Mr. Field, on April 5th, the President of the Board of Trade said that as at present advised he did not think it desirable for the Government or the Royal Commission on Paper to take possession of existing stocks, and trusted that no such action might prove to be necessary.

At the present time when new cars are hard to obtain, medical men, like other motorists who have to study economy, are looking for means to improve the running of existing cars which have been in use a few years, and would perhaps have been sold had new ones been obtainable. One of the most likely parts of an engine to wear and cause trouble is the carburetter that has moving parts of any kind, and as any wear affects the adjustment, the efficiency of the engine is reduced. It has been found by many motorists that a moderate sum spent on a new carburetter of good make has put several years on the life of the car, incidentally enhancing the price which could be obtained for it if the owner desires to sell. The carburetter of which we have heard most in this connexion is the Zenith, which has no moving parts that can wear, and is therefore particularly adapted for use on a car where reliability is of the first importance, as is the doctor's. Apart from any improved running we are informed that a considerable economy is effected in petrol consumption. In one instance which has been mentioned to us, the improvement was from sixteen to twenty-three miles to the gallon. At the present price of petrol such a result would lead to the carburetter paying for itself in a few months.

THE WAR.

THE ATTACK ON THE ARMY MEDICAL SERVICE.

AN officer who has been with the British Expeditionary Force in France continuously, save for two or three periods of leave, since October, 1914, has written as follows in a private letter after reading the full report of Mr. McNeill's speech in the House of Commons on March 15th, and Colonel Lee's reply on March 16th:

On March 15th everything that it was thought could be said against the Army Medical Service and its chief administrators in Great Britain and France was voiced by one of the most experienced exponents of grievances that the House of Commons possesses. On March 16th the charges were met by Mr. Arthur Lee in a speech so crushing, that even so doughty a fighter as Mr. McNeill seems to have felt that he must throw up his brief. Incidentally he admitted that he had no first hand knowledge of matters, and threw the blame for his errors on those who instructed him.

Statements of this kind are usually written down as mere excuses, but in the present instance this would be unjust, because what was apparently said to Mr. McNeill and repeated by him is very much what has been said to a good many of us on many occasions. It is, in fact, a good many months ago that these attacks on the Army Medical Service began, and it has long been clear that there is a cave whose inhabitants are out to disturb as far as they possibly can the confidence of the public in the wisdom and ability of the administrators of the medical affairs of the army.

The cave has exhibited considerable cunning. Knowing that the public had too intimate and personal a knowledge of the way in which the wounded were being treated to be easily convinced that there could be anything much wrong the cave has avoided a frontal attack, and endeavoured to excite disquiet by dwelling on alleged slackness in matters of organization and other technical details. On such subjects neither the public nor the medical profession at large can be well informed. So for a time the cave had a little success, being assisted thereto by certain newspapers which one after the other open their columns to the grievances, which the writers failed to recognize were due not to the army system but to the inevitable circumstances of war.

But the success of the cave was not prolonged; its battle line began to look ragged a month or two ago, and when at length in March it ventured on its great push it was utterly defeated. Consequently the campaign is not one of which the cave has any reason to be proud, for it has certainly done no good, and probably has achieved some harm. Attacks of the kind almost invariably necessitate the preparation of returns and reports which would not otherwise be needed, and thus lessen the time available for attending to ordinary and really useful business. These attacks ought, therefore, to be resented both by the medical profession and the general public as *contra rem publicam*.

Never before have two men had to undertake a larger task or greater responsibilities than those that have been shouldered by Sir Arthur Sloggett and Sir Alfred Keogh respectively during the last eighteen months. They have had to deal with members of a profession accustomed both to think for itself and to express its opinions freely, and it was natural that various steps taken both at home and abroad should have been deemed open to criticism; it was almost equally natural but far less defensible that one man here and another there should have considered that had he been in charge of matters he could have managed things much better. But, nevertheless, the fact remains that a huge task has up to the present been most successfully accomplished. The health of the army has been maintained at a singularly high level, and the wounded have been tended both individually and collectively with tenderness and most enlightened care.

The medical public, in fact, owes the deepest gratitude to the officers in question. During the last eighteen months it has been upon its trial, and had it been less ably led it would have suffered greatly in public opinion, whatever sacrifices individuals might have made. As things are, it stands distinctly higher in public opinion than it did at the beginning of the war.

What have been the motives of the men who entered this cave? It is difficult to say. Doubtless they considered themselves to be acting altruistically, but it is not likely that anyone else will take that view. There are certain individuals in this world who, having obtained a certain position, resent the idea of any large public affair being conducted without their assistance. There are others who are ever ready to pull down any existing pile in the hope that in the general ruin something valuable may roll in their direction. There are also nobodies who, confusing notoriety with fame, deem that they will become somebodies if they agitate long enough and loud enough.

Whether there will be any attempt to restart the campaign remains to be seen. But being aware of the methods the cave has hitherto employed, I suggest that anyone invited to assist them should closely question those by whom they are approached. If, for instance, statements are made to them on the alleged authority of B. or C. they should ascertain precisely what real knowledge of matters B. or C. possess. Both in France and in England the work is on so large a scale that it is scarcely possible for anyone not seated at the centre where all nerves meet to apprehend accurately any particular item of work. Moreover, in France the different units are so scattered, there is so much difference in their environment and the character of the work, and aims and general needs everywhere differ so greatly that only exceptionally fortunate individuals gain any real knowledge of it as a whole. An officer may work quite a long time in France and yet acquire nothing beyond hearsay knowledge of a very small part of the general work.

If the statements of men of really long experience are to be received with caution, those of individuals who after a few months abroad have preferred to return home to look after their personal interests should not be swallowed even with a pinch of salt.

THE CARE OF CRIPPLES IN GERMANY AND AUSTRIA.

A CONGRESS was held in Berlin early in February to discuss the care and education of crippled soldiers. An exhibition of artificial limbs and other devices for helping cripples to become self-supporting was also held. It was stated that in Austria this problem had been dealt with so drastically that it was impossible for a cripple to refuse treatment, and that in Hungary a special commission had been appointed, with powers to refuse pensions and every other compensation to cripples who would not be treated. Another speaker gave an account of the numerous institutions which had sprung up in connexion with the education of cripples. He described how "compensation psychoses" were discouraged, and how the paramount importance of regaining their capacity for work was impressed on soldiers early, the healing of their wounds being treated as a secondary consideration. At the outbreak of the war there was hardly a single institution in Austria for the treatment and education of cripples. The initiative, ingenuity, and capacity for organization shown by Spitzy had done much to promote the welfare of the crippled soldier. His hospital contained 3,500 beds, 1,300 of which were devoted to soldiers with amputated limbs. The hospital included twelve different departments; one ward was set apart for wounds of the knee, another for wounds of the finger, and so on. About three-fifths of all the crippled Austrian soldiers had previously worked on the land, and new occupations on the land were chosen for them. Professor Dollinger said that in Hungary about 5,000 beds had been set apart for crippled soldiers, and institutions had been organized for the education of cripples, usually with a view to farm work. Dealing with the problems of artificial limbs, one speaker insisted that success depended much more on the cripple's desire to work than on the nature of the artificial limb. The standardization of every artificial limb was also insisted on in order that the whole or part of such a limb could easily be replaced. It was also generally agreed that crutches should be dispensed with as early as possible and the cripple be given some temporary artificial limb, be its construction ever so primitive. In this connexion the plaster-of-Paris limb was warmly recommended.

TREATMENT OF WOUNDS OF THE BRAIN.

THE Nobel prize winner, R. Bárány, who during the siege of Przemysl by the Russians was reported to have dispatched his observations on war surgery by aeroplane to the Austrian headquarters, has now published a paper

on the treatment of wounds of the brain.[1] He observed from start to finish sixty cases of bullet and shell wounds of the brain. He learnt to abandon rubber and glass drainage tubes in favour of the "cigarette" drain. In a series of thirty-nine cases in which drainage was by small strips of gutta-percha, recovery occurred in 20.5 per cent. Being impressed by the part played by secondary infection of the brain, he kept the wound closed and undrained in many cases. Out of thirteen in which the wound was closed from the outset, healing by first intention occurred in nine; in three plastic operations on the dura had to be undertaken. He considered that, as a rule, when the wound was not obviously infected and came under treatment within the first twenty-four hours, the best course was to operate at once, to excise the tissues about the wounds of entry and exit, to remove fragments of bone and foreign bodies from the brain, to arrest haemorrhage, and to close the wound carefully with sutures without employing any drain. When an abscess had already formed it should be opened and drained with strips of gutta-percha.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Killed in Action.

Fourth-class Assistant Surgeon George Cyril West, of the Indian Subordinate Medical Department, is reported as killed in action. He is the third officer of the I.S.M.D. thus reported as killed within the past three weeks. He was born on August 7th, 1893, attained warrant rank on April 20th, 1914, and prior to the war was stationed at Dalhousie.

Wounded.

Lieutenant N. McCall-Smith, R.A.M.C., temporary.
Assistant Surgeon J. W. Newbold, I.S.M.D.

Died on Service.

Major Francis Courtenay Lambert, R.A.M.C., died of paratyphoid fever on service abroad, on March 29th, aged 37. He was born at Dover on January 22nd, 1879, the eldest son of Lieutenant-Colonel Lambert, late of the Royal Marine Artillery, now of Lyston, Branksome Park, Bournemouth, was educated at Wimborne Grammar School, at Cheltenham College, and at St. Mary's Hospital, and took the qualifications of M.R.C.S. and L.R.C.P.Lond. in 1902, after which he served as house-surgeon at St. Mary's. He entered the army as lieutenant on January 31st, 1903, becoming captain on July 31st, 1906, and major on October 31st, 1914. He was recently serving in Mesopotamia, where he was twice mentioned in dispatches.

Major Robertson Stewart Smyth, R.A.M.C., died in a nursing home in London on April 6th, aged 36. He was born on August 18th, 1879, the fourth son of the late William Smyth, of Brookfield House, Banbridge, and was educated at Dungannon Royal School and at Trinity College, Dublin, where he took the M.B., M.D., B.Ch., and B.A.O. in 1904. There he was captain of the Dublin University Rugby fifteen, and played in several international matches in 1903–4. Entering the army as lieutenant on July 31st, 1905, he became captain on January 31st, 1909, and had recently been promoted to major. He had been serving in France from September, 1914, up to last December, when he was invalided. He was mentioned in despatches by Lord French for gallant conduct in the field. One of his brothers is a captain in the Royal Irish Rifles.

Major Walter Linney Hawksley, R.A.M.C.(T.F.), is reported as having been accidentally killed on service on April 4th, aged 33. He was the eldest son of the late Dr. Hawksley, of Southport, and was educated at Liverpool University, where he took the M.B. and Ch.B. in 1904 and the D.P.H. in 1907. After qualifying, he acted as house-surgeon and house-physician of the Northern Hospital, Liverpool, as resident medical officer of the new City Hospital, Fazakerley, and as school medical officer to the Liverpool Education Committee, finally becoming assistant medical officer of health and chief tuberculosis officer, Liverpool, and assistant lecturer in hygiene, Liverpool University. He got a commission as captain in the 2nd West Lancashire Field Ambulance on October 1st, 1911, and had recently been promoted to major. He leaves a widow and two young children.

[1] *Beiträge zur klinischen Chirurgie, kriegschirurgisches.* Heft 3. Abstract in *Muench. med. Woch.*, January 4th, 1916.

Major Charles James Holmes, R.A.M.C.(retired), died at his residence in Lancaster on April 5th, aged 58. He was born on October 15th, 1857, the youngest son of Mr. John Holmes, of Athlunkard, co. Clare, was educated at Queen's College, Cork, and took the M.D., M.Ch., and the obstetrical diploma of the Royal University, Ireland, in 1882, also the F.R.C.S.I. in 1890. Entering the army as surgeon on August 2nd, 1884, he became surgeon-major on August 2nd, 1896, and retired on November 16th, 1904. He rejoined on mobilization in August, 1914, and was employed in charge of the military hospital at Bowerham Barracks, Lancaster. He had seen much war service: Sudan, 1885, medal with clasp, and Khedive's bronze star; Sudan, 1896, advance on Dongola, and operations of September 19th, medal with clasp and Khedive's medal; and South Africa, 1900–2, in Cape Colony and Orange River Colony, Queen's medal with one clasp and King's medal with two clasps.

DEATHS AMONG SONS OF MEDICAL MEN.

Underhill, Charles Bertram, Second Lieutenant West Yorkshire Regiment, fourth son of Dr. F. T. Underhill, formerly of Tipton, Staffordshire, now medical officer of health, Vancouver, British Columbia, killed on March 28th, aged 22. He was born at Tipton, educated at Vancouver and at McGill University, and was assistant city analyst at Vancouver. At the beginning of the war he joined the 11th British Columbia Regiment, and came to Europe with the first Canadian contingent. He got a commission in the West Yorks on December 22nd, 1914, and went to the front last September. He was serving as machine gun officer of his battalion when killed.

NOTES.

MR. HUGH M. RIGBY, M.S.Lond., F.R.C.S., has been appointed a consulting surgeon to His Majesty's forces in France, with the rank of Colonel A.M.S.

HONOURS.

The Médaille d'Honneur des Epidémies has been bestowed by the French Government on two members of the staff of British Red Cross Clearing Hospital No. 16, Miss Bradley, matron, receiving the silver medal, and Miss Dorothy Gully, a sister employed in the nursing of contagious diseases, the bronze medal.

MESOPOTAMIA DISPATCHES.

A dispatch from General Sir John Nixon, K.C.B., covering the operations in Mesopotamia from the middle of April to the end of September, 1915, dated January 1st, 1916, was published in the *London Gazette* of April 5th. Among a large number of officers mentioned for good service are the following medical officers:

Operations at Khafajiyah, April 24th to June 19th, 1915.—Major H. R. Brown, I.M.S.

Operations at Amara, May 31st to June 4th, 1915.—Colonel P. Hehir, C.B., I.M.S. Lieutenant-Colonels: H. O. B. Browne-Mason, R.A.M.C.; J. F. Donegan, R.A.M.C. Captain G. Wilson, R.A.M.C. Lieutenant R. V. Martin, I.M.S. Assistant Surgeons E. A. Cotton and E. S. Sheele, I.S.M.D.

Euphrates Operations, June 26th to July 25th, 1915.—Colonel H. M. Adamson, R.A.M.C. Lieutenant-Colonel E. Jennings, I.M.S. Major A. Spitteler, I.M.S. Captains: P. B. Bharucha, I.M.S.; R. C. Clifford, I.M.S.; R. E. Flowerdew, I.M.S.; F. A. Robinson, R.A.M.C. Sub-Assistant-Surgeons: Mohan Lal, Barkatullah, Fazl Ahmad, I.S.M.D.

Operations at Kut-el-Amara, September 28th, 1915.—Surgeon-General H. G. Hathaway, C.B., A.M.S., Staff. Lieutenant-Colonel J. F. Donegan, R.A.M.C. Majors: S. Anderson, I.M.S.; *F. C. Lambert, R.A.M.C. Captains: K. K. Mukerji, I.M.S.; J. Startin, R.A.M.C. Lieutenant F. T. Simpson, R.A.M.C. Assistant Surgeons: A. S. Morarji, H. J. Luxa, S. A. de Souza, I.S.M.D. Sub-Assistant Surgeons: Mithu Lal, S. Manikkam, I.S.M.D.

Operations from November 6th, 1914, to April 14th, 1915 (previously published in *Gazette of India*).—Colonel P. Hehir, C.B., I.M.S. Staff. Lieutenant-Colonels: J. Hennessy, F. J. Palmer, H. M. Adamson, F. J. Donegan, H. O. B. Browne-Mason, D. J. Collins, all R.A.M.C.; and G. B. Irvine, I.M.S. Majors: E. Pennett, H. A. Bransbury, J. C. Foster, and *F. C. Lambert, all R.A.M.C.; and J. H. Horton, D. S. A. O'Keeffe, H. R. Brown, and L. Cook, all I.M.S. Captains: A. T. J. McCreery, R.A.M.C.; and R. E. Wright, T. H. Hislop, D. Arthur, C. H. Barber, H. E. Shortt, C. C. C. Shaw, G. F. Graham, R. Knowles, J. J. H. Nelson, F. C. Fraser, and H. E. Stanger-Leathes, all I.M.S. Lieutenants: E. B. Allnutt and †M. Burnett, both R.A.M.C.: N. K. Bal and L. A. P. Anderson, both I.M.S. Assistant Surgeons, I.S.M.D.: W. H. Brown, T. H. S. Huffton, E. A. Cotton, L. C. Raphael, H. Vincent, J. V. Fernandez, J. H. T. Pacheco, H. N. Murphy, and A. F. Phaure. Sub-Assistant Surgeons, I.S.M.D: V. L. U. Ram Pandit, Mohan Lall, G. R. Hariba, V. S. Nayakar, M. Ramasami, Sundar Singh, K. W. Khuperkar, and S. M. Dadasahib. Dr. Arthur Bennett (American Mission Hospital).

* Since dead. † Killed in action.

MEDICAL OFFICERS WANTED.

14th Mounted Brigade Field Ambulance.

There are vacancies for medical officers in this unit. Apply to Major J. Hamilton, Cricket Ground, Canterbury.

2/1st Home Counties Casualty Clearing Hospital.

Three medical officers are required for this unit. Application to the Officer Commanding 2/1st Home Counties Casualty Clearing Hospital, Halton Camp West, Tring.

England and Wales.

THE number of patients (pauper, criminal, and private) for whom the London County Council was responsible to find accommodation at the beginning of the present year was 20,886, as compared with 21,539 twelve months previously, while the total number of patients, including those in the Metropolitan Asylums Board's institutions, in workhouses, and with relatives and friends, was 28,252, as compared with 29,211 at the beginning of 1915. It is the first time since the Council has been the responsible authority that decreases have been recorded in both these totals. The decrease of 653 in the number of lunatics under reception orders is made up of 363 males and 290 females, and as the ratio of the sexes in the asylum population is 9 males to 11.8 females there is a proportionately greater reduction of the male insane. It is assumed that the great decrease in pauperism is reflected in these figures.

ROYAL COMMISSION ON UNIVERSITY EDUCATION IN WALES.

A Royal Commission on University Education in Wales has been appointed "to inquire into the organization and work of the University of Wales and its three constituent colleges, and into the relations of the university to those colleges and to other institutions in Wales providing education of a post-secondary nature, and to consider in what respects the present organization of university education in Wales can be improved, and what changes, if any, are desirable in the constitution, functions, and powers of the university and its three colleges."

The members of the Commission are: Viscount Haldane (Chairman); Professor W. H. Bragg, F.R.S., Quain Professor of Physics in the University of London; the Hon. W. N. Bruce, C.B., a Principal Assistant Secretary under the Board of Education, and Sir Owen M. Edwards, M.A., Chief Inspector of the Welsh Department of the Board; Mr. W. H. Hadow, D.Mus., Principal of Armstrong College, Newcastle; Mr. A. D. Hall, F.R.S., a Commissioner under the Development Act; Sir Henry Jones, M.A., D.Litt., Professor of Moral Philosophy in the University of Glasgow; Sir William Osler, Bt., F.R.S., M.D., Regius Professor of Medicine in the University of Oxford; Miss Emily Penrose, M.A., Principal of Somerville College, Oxford. The secretary to the Commission is Mr. A. H. Kidd, of the Board of Education, to whom all communications should be addressed.

LIVERPOOL ROLL OF HONOUR WEEK.

The Lord Mayor has issued an appeal to all classes in Liverpool to provide a special fund for supplementing Government pensions to widows, orphans, and dependents of Liverpool men who fall in the war, and to provide allowances to deserving cases in which pensions have been refused. Every class in the city will be canvassed during the week May 7th to 13th. The Liverpool Medical Institution has already sent a circular to the medical profession of the city, signed by its president, Dr. Charles J. Macalister, Dr. Hubert Armstrong, secretary, and Dr. Llewellyn Morgan, treasurer. It is desirable that the subscriptions from each profession, vocation, and trade should be contained in one list, and the medical profession has already subscribed many generous amounts since April 1st. This local fund will be administered under the control or direction of the Lord Mayor, in accordance with the principles and policy of sympathetic treatment hitherto adopted in connexion with Town Hall Fund.

LIVERPOOL MEDICAL INSTITUTION.

At the last pathological meeting, held at the Liverpool Medical Institution, Professor Beattie demonstrated a simple method of anaërobic culture which meets the difficulty in obtaining pyrogallic acid. Sterilized white vaseline is the medium which acts like a plug over the culture medium in the test tube and occludes the air. Professor Beattie showed luxuriant growth of anaërobes with the vaseline plug raised by the gas evolved during their growth, and the complete absence of growth of aërobic micro-organisms in similarly prepared test tubes. Professor Ernest Glynn gave a demonstration of various ulcerative processes of the oesophagus, especially its cardiac end. To prevent *post-mortem* digestion the tissues were fixed immediately after death by the introduction of formalin into the oesophagus and stomach. Professor Glynn has used the method in several hundred cases for over fifteen years. Numerous macroscopic and microscopic slides showing ulceration in varying degrees of evolution were shown in the lantern. Professor E. Glynn accounted for the clinical symptoms of pyrosis, heartburn, and waterbrash by reference to the morbid changes in the cardiac end of the stomach and the oesophagus which the formalin method had rendered apparent to the naked eye.

Scotland.

THE Glasgow Corporation has decided to proceed with the scheme for a municipal dairy to supply milk to the hospitals. The corporation requires 156,000 gallons of milk a year. The farmers who contracted have refused to submit their herds to the tuberculosis test.

Dr. Templeman, M.O.H. Dundee, in his annual report, states that the infant mortality-rate for 1915 was 209, the highest figure since 1893, when it was 217. The high rate in 1915 was due to whooping-cough and measles, and to an increase in the number of deaths from bronchitis and pneumonia accompanying these diseases.

At the 106th annual meeting, on April 7th, of the Edinburgh Royal Institution for the Education of Deaf and Dumb Children it was reported that the new buildings—an educational wing with twelve classrooms, etc.—had been added without trespassing upon capital. Dr. J. W. Ballantyne spoke of the three groups of deaf-mutes—the acquired, the hereditary, and the antenatal but non-hereditary, and pointed out that in every one there was now the hope of prevention. The acquired could be lessened by the decrease in the infectious fevers, the hereditary by the restriction of intermarriages between deaf and dumb persons, and the antenatal but non-hereditary by the campaign against the venereal diseases.

The total amount received by the Lord Provost of Glasgow down to the end of last week for the Princess Louise Scottish Hospital for Limbless Sailors and Soldiers at Erskine was nearly £38,000. Among the subscriptions received was one of £100 from Mr. James J. Hamill of Columbus, Ohio, who, in his covering letter, said that he desired "to help to some slight extent in alleviating the pain, and suffering, and hardships of the poor fellows at the front who are so bravely sacrificing everything in this righteous cause."

Good progress is being made with a scheme of the Scottish Veterans' Garden City Association for the housing and care of permanently disabled soldiers and sailors. The site is immediately to the east of the present village of Longniddry on the north side of the main road from Edinburgh. Plans for the laying out of the grounds have been prepared, and the construction of the houses will be commenced shortly. Part of the ground is reserved for small workshops, a public washhouse, and a public hall. The houses will be of three sizes, with one room, two rooms, and three rooms respectively, in each case with kitchen, scullery, and other necessary accommodation.

EDINBURGH CHILDREN'S HOSPITAL.

At the annual meeting of that great institution, the Royal Edinburgh Hospital for Sick Children, it was reported that the work had gone on unimpaired, but the deficit of over £4,000 on ordinary income was a source of grave anxiety. Lord Strathclyde, in moving a resolution commending the hospital to the liberality of the public, expressed high appreciation of the self-sacrificing devotion of the medical and surgical staff. Many had entered the military services; all honour, he said, to them, but all honour also to those who remained behind to carry on not a diminishing but an increasing work. The Rev. Dr. Fisher, in seconding, testified to the efficiency, ability, and economy with which the work of the hospital was conducted. He referred to the falling birth-rate, which, he said, was one of the most ominous and sinister facts in the social life of the time, and added that it was a national duty to preserve the lives of the children, for the future of the empire depended not upon the young men and women of to-day, but upon the children coming up behind them.

Ireland.

Dr. Roantree, of Bray, M.O. for one of the Rathdown dispensary districts, having accepted a temporary commission in the R.A.M.C., the guardians have appointed the locumtenent of his private practice to be his deputy at the dispensary, and have allowed Dr. Roantree half pay during his absence.

Dr. E. C. Thompson, of Omagh, who has been surgeon to the Tyrone County Hospital for over forty-one years, has been appointed deputy lieutenant for the county. He was for some years M.P. for North Monaghan.

The means to be taken to lessen infantile mortality were discussed at a meeting of the Joint Committee of the Irish Women's Local Government Associations held in Dublin recently. It was pointed out that in the country parts of Ireland the mortality was lower than in England, but higher in the cities. The pasteurized mild dépôt in Dublin had done very good work; the deficit, which was between £300 and £350 a year, was made up by the founder, Lady Aberdeen. The attempt to induce the corporation to take it over and run it as a municipal undertaking had not been successful.

The Petrol Supply.

Sir Matthew Nathan, Under Secretary to the Lord Lieutenant, has addressed to the members of the medical profession who use motor cars or motor cycles, whether as general practitioners, consultants, or medical officers engaged as such in the public service, a letter dwelling on the necessity for economy in the consumption of petrol in face of the difficulty caused by the temporary diminution of shipping and transport facilities. At the same time he lays stress on the anxiety of the authorities to provide for all necessary public services according to their importance, and the need of rendering all possible aid to the medical profession in its work is fully recognized. With the view of avoiding the danger that this work might be hampered in the future, each medical man who thus uses a motor car in his practice has been requested to furnish the same particulars as to his car and consumption of petrol as have been asked for in England.

Amalgamation of Union Workhouses.

The cost of upkeep of many of the workhouses in Ireland is absurdly large in proportion to the number of inmates. At present a workhouse is maintained in every union, and the amalgamation of unions, the only authorized method of reduction, is not convenient in all areas. The problem has lately been investigated in co. Tyrone. The number of inmates has been reduced by the operation of the Old Age Pensions Act and recently by war conditions, while the great rise in the cost of fuel and provisions has accentuated the capitation expenditure. The smaller unions object to complete amalgamation with the larger, but means should be found to end the extravagance involved in keeping up large workhouses for a mere handful of paupers, and at the same time to keep the smaller unions in existence for the purposes for which they are still needed. This could be done if some of the boards of guardians closed their workhouses wholly or in part, and boarded out their paupers in adjoining unions, while the union and the board of guardians remained for the purposes of administering the Medical Charities Act and outdoor relief. An Act has been passed authorizing the transfer of paupers from one workhouse to another "in connexion with the present war." The Tyrone County Council and all the local boards have adopted resolutions in favour of the immediate submission to Parliament of a short amending Act to delete these words. The resolution has been sent to other county councils, and will, it is hoped, meet with general support.

The President of the Republic of Venezuela has issued a decree establishing a medical school at Caraças.

The United States Senate has now before it a bill providing for the establishment in the Department of Justice of a bureau for the study of the criminal, pauper, and defective classes. Its work would include laboratory investigations and the collection of sociological and pathological data.

Correspondence.

INDUSTRIAL FATIGUE AND ITS CAUSES.

Sir,—Your leading article on "Industrial Fatigue" in your issue of April 8th has many comments that are equally applicable to fatigue in our own profession. There must be a considerable body of general practitioners who are doing and have been doing much extra work during the past two years, and who have not had any kind of holiday since 1913. These men, even with the best of good will to do all they can to help, are feeling "fed up." Locumtenents are scarce, expensive, and fastidious, and, as local schemes for arranging holidays only add to the burdens of already fatigued colleagues, I should like to ask if it be not possible to dilute the labour of the general practitioner during the coming summer with fourth and fifth year students. These young men could work a practice under the supervision of a neighbouring colleague, who would act as the deputy of the man on holiday. If the General Medical Council and the British Medical Association could see their way to accept and foster this suggestion, the details of the employment of fourth and fifth year students could be arranged later. I am quite convinced that unless something is done to give general practitioners a short rest and holiday many will break down, to the disadvantage of both civil and military populations.—I am, etc.,

Warrington, April 9th. J. S. Manson.

PERNICIOUS ANAEMIA AND ERYTHRAEMIA.

Sir,—I can trust Dr. O. Leyton not to misinterpret my presumption in venturing—without any clinical particulars beyond those published on p. 484—to express a view of the remarkable facts he has observed which is at variance with his own unhopeful conclusion. He succeeded in doubling the haemoglobin and in nearly doubling the red count within one week. Why, then, should the patient have left the hospital after a year's treatment much the same in condition as he had entered it? That week's work was worth renewing—on the same plan suitably modified. We owe to him the discovery seemingly, let us hope of a cure, but at any rate of a great fact—that for pernicious anaemia erythraemic blood possesses the double qualification, special to all potent curative agents, of a remedy and of a poison. A little of them can stimulate that which too much will destroy. The dose first injected was conspicuously beneficial, although such as to produce toxic effects closely akin to anaphylaxis. The second, four times larger, was wholly toxic. As it stands, that demonstration would seem to encourage minimizing any future dose instead of increasing it, and repeating it steadily at its optimum of individual efficiency as between donor and recipient, with any dilution or artificial modification that experience might indicate. That attempt strikes one as more promising than its converse, merely hinted at in the paper, that of curing erythraemia with the blood of pernicious anaemia. The sooner theories are disproved or improved, surely the better. For years, in dread of alarming symptoms once witnessed, I had denied asthmatics their adrenalin—till Dr. Hertz published the safety and efficiency of its minimal doses. We shall, indeed, thank Dr. Leyton for not having long buried his find if, as seems possible, good oil has been struck.—I am, etc.,

London, W., April 2nd. William Ewart.

NOMENCLATURE OF TYPHOIDAL DISEASES.

Sir,—Since the differentiation of the typhoid group of diseases into the three varieties caused by the Eberth-Gaffky bacillus, the *B. paratyphosus* A and the *B. paratyphosus* B respectively, a need has arisen for one word which can be used for the whole group in common. In the large majority of cases it is quite impossible to diagnose clinically the three infections one from the other, and it is not always possible to obtain readily bacteriological aid. There is no necessity, however, to coin another word as we possess two already which are used interchangeably —"typhoid" and "enteric." I suggest that the word "enteric" be used to denote all or any of the three infections above mentioned, and any similar that may hereafter

be differentiated, and that the word "typhoid" be restricted to cases of infection by the Eberth-Gaffky bacillus.—I am, etc.,

Homerton, N.E., April 10th. E. W. GOODALL.

JEJUNOSTOMY AND JEJUNO-COLOSTOMY.

SIR,—Mr. Sampson Handley, in his paper in the JOURNAL last week (p. 519) refers to a paper of mine published six years ago in the *Archives of the Middlesex Hospital*, wherein I advised jejunostomy in cases of post-operative paralytic obstruction. He thinks it would probably fail. He opines wrongly; it is most successful.

In a future issue of your JOURNAL I hope to publish another paper on the subject supported by six successful cases.

Mr. Handley suggests jejuno-colostomy and caecostomy, which is in effect a jejunostomy, with the difference that the drainage from the jejunum takes a course through a segment of the large intestine instead of reaching the exterior direct.—I am, etc.,

London, W., April 11th. VICTOR BONNEY.

MANY NAMES FOR THE SAME THING.

WE have received from Messrs. Burroughs, Wellcome, and Co. a letter, the following passages from which seem fully to state their position:

With regard to the editorial article in your issue of the 8th inst., relative to the use of the word "Tolamine" as a short title for para-toluene-sodium-sulphochloramide, we suggested the use of this word to the authors of the research in place of chloramine or chloramine-T, the names they gave to the substance, because the word chloramine has been used by John Wyeth and Brother, Philadelphia, for at least twenty-five years to denote a compound chloride of ammonium pastille manufactured by them.

We made our position in the matter perfectly clear to the investigators, and gave them the option of adopting "Tolamine" as a common word for the substance, but as they did not agree to this suggestion, we then explained that it was impracticable for us, in the circumstances we had mentioned, to use the word chloramine or chloramine-T (the latter title still containing the word chloramine), and we should therefore issue the preparation under the word "Tolamine," and register it as our trade mark.

In our opinion the use of the word chloramine involves the danger of using one name for many substances, as, quite apart from the confusion which will arise with the existing proprietary preparation, chloramin and chloroamine are applied to the simple compound NH_2Cl, and further, there is additional risk of confusion with the *Codex* preparation chloramide.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following degree has been conferred:

M.D.—A. L. Pearce Gould.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on March 22nd.

Recognition of Teacher.—Mr. H. S. Souttar was recognized as a teacher in surgery at the London Hospital Medical College.

M.B., B.S. Examination.—A revised syllabus in forensic medicine for the M.B., B.S. examination for internal and external students was adopted for examinations to be held in and after the session 1917–18.

Presentation Day.—The presentation of students to the Chancellor will take place on May 10th at 3 p.m., and a service for members of the University will be held at Westminster Abbey at 6 p.m.

Dixon Fund.—Applications for grants from the Dixon Fund, which is allocated annually for the purpose of assisting scientific investigations, must be received by May 15th. Particulars can be obtained on application to the Academic Registrar.

UNIVERSITY OF GLASGOW.

GRADUATION CEREMONY.

AT the graduation ceremony held in the Bute Hall on April 8th, the degree of M.B., Ch.B. was conferred by the vice-chancellor, Sir Donald MacAlister, upon fifty-two graduates, ten of whom were ladies. Practically all the male recipients have, it is understood, signified their intention of entering the military or naval medical services. Professor Bryce, Dean of the Faculty of Medicine, presented the graduates in medicine. At the conclusion of the capping ceremony the Vice-Chancellor, addressing the graduates, said: "You have now been admitted into the ranks of a profession which expects, and expects with confidence, that you will do your duty to your fellow men. That duty demands that you shall exercise all your skill and knowledge on their behalf, and, still more, that you show yourselves humane, unselfish, upright, and devoted. Whether you work at home or abroad, whether your practice be civil or military, you are put on your honour to render your highest service to your country and your King. A great example has been set you by the Glasgow men and women who have made famous throughout the world the name of its schools of medicine. You are now deemed fit to take your place beside them. Our earnest prayer is that you will equal or surpass them in all that is worthy and of good report. In the name of the university I give you its benediction, and commend you, in war and peace, to God's care and keeping."

The following is a list of the recipients of the degree of M.B., B.Ch.:

*W. D. Allan, J. Alston, W. Baird, Christina B. Buchanan, D. Cameron, *J. Chalmers, D. H. Coats, W. K. Council, A. F. Cook, A. S. Cook, †W. G. Cook, J. N. Cruickshank, A. Davidson, Jane B. Davidson, *J. Dunbar, J. B. Fisher, M. M. Frew, T. R. Fulton, W. H. Gibson, Jessie C. Gilchrist, J. Glaister, J. S. Kinross, *G. Kirkhope, W. J. B. Lavery, R. Lindsay, Dorothy M'Cubbin, J. W. Macfarlane, J. MacInnes, K. S. Macky, D. M'Laren, Elizabeth S. Martin, F. R. Martin, J. M'D. Matheson, W. W. Morrison, A. Morton, W. O'Brien, J. A. Paterson, T. S. Paterson, J. H. Paul, W. J. Poole, T. J. D. Quigley, J. Richardson, A. W. Ritchie, G. W. Ronaldson, *Mary H. Routledge, Mary I. Sinclair, *Jane Stalker, W. M. Stewart, J. L. Torley, R. S. Weir, *C. A. Whittingham, *Marion B. D. Wilson.

* With distinction. † Also graduated as M.A.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE.—T. A. du Toit, R. B. Forgan, W. H. Kerr, R. F. Kerr, Lizzie R. Clark, M. H. Carleton, J. B. Singh, G. C. Field. *Passed in Biology:* P. E. Malloch. *Passed in Chemistry:* J. Murray, A. W. Smith.

SECOND COLLEGE.—A. E. Hempleman, R. E. Hopton, A. S. Hughes, E. L. Adendorff, Rebecca Goodman, J. K. Steel, W. Gibb. *Passed in Anatomy:* H. W. Howatson. *Passed in Physiology:* J. J. van Nickirk, G. S. Woodhead, J. F. Cook.

THIRD COLLEGE.—C. V. Samwel, E. E. Bronstorph, G. P. de Silva, H. Shaw, A. I. Meek, C. R. C. Moon. *Passed in Pathology:* M. A K. Mofreh, Eliza J. Stuart, P. M. Fernando, D. Stewart. *Passed in Materia Medica:* D. C. Howard.

FINAL.—Z. A. Green, J. E. Ainsley, J. C. Badwell, H. C. A. Haynes, B. C. Haller, J. Byrne, J. V. R. Rohan, S. J. Abrahams, J. Blackburn, C. Harris, A. Caston, R. C. W. Spence. *Passed in Medicine:* S. W. Hoyland. *Passed in Surgery:* J. J. Curtin. *Passed in Midwifery:* J. Adami, J. J. Curtin. *Passed in Medical Jurisprudence:* J. H. Blackburn, R. V. Clarke, C. G. Book, W. McElroy, M. A. White.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THE following have been admitted as Licentiates:

J. F. Coffey, K. Elmes, H. Gerrard, J. Magner, C. A. R. McCay, D. McCormack, J. A. McKinnon, A. J. Neilan, J. P. Pegum, G. C. L. Woodroffe.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

PRIMARY EXAMINATION. — *Part I. Biology:* K. J. H. Davies, H. T. M. Price. *Chemistry:* K. J. H. Davies. *Materia Medica and Pharmacy:* L. E. A. B. Farr, T. F. Reason. *Part II. Anatomy:* W. M. Anthony, G. R. Aspinwall, W. A. Bibby, T. L. Bonar, J. Brodetsky, K. R. Chapple, E. S. Davies, D. A. Dyer, J. Gordon, J. Gorsky, W. R. G. Harris, R. A. Hickley, A. R. Hill, O. S. Hillman, C. Holmes, R. E. Jenkins, E. F. J. Jones, R. M. Jones, F. W. Kemp, N. H. Kettlewell, W. Kilroe, P. Lloyd-Williams, L. Lyne, J. J. M. MacDonnell, J. S. Moore, G. E. Mo gan, H. S. Morris, W. R Ranson, G. V. Richards, S. Robinson, A. H. Shelswell, H. W. Southgate, E. A. sparks, J. Stephen, A. C. Teuton, C. de B. Thomson, A. E. Young. *Physiology:* W. M. Anthony, G. R. Aspinwall, J. Brodetsky, E. S. Davies, J. Gorsky, W. R. G. Harris, A. R. Hill, O. S. Hillman, C. Holmes, R. E. Jenkins, E. F. J. Jones, F. W. Kemp, J. S. Lewis, P. Lloyd-Williams, L. Lyne, J. J. M. MacDonnell, J. S. Moore, G. E. Morgan, H. S. Morris, W. R. Ranson, G. V. Richards, A. H. Shelswell, H. W. Southgate, E. A. Sparks, A. C. Teuten, A. E. Young.

LONDON SCHOOL OF TROPICAL MEDICINE.

THE following were approved at the examination held at the termination of the fiftieth session of the school:

*W. N. Leak, †H. Bayon, Miss V. G. Field, E. A. Blok, J. A. Beels.

* Dr. Leak gains the "Duncan" Medal, this being awarded to the student who obtains the highest aggregate of marks.

† With distinction.

The Services.

EXCHANGE.

LIEUTENANT R.A.M.C., Regt. M.O., desires to change with officer holding a position in base hospital, casualty clearing station, or ambulance train, the latter preferred. Address, No. 1500, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Obituary.

SIR ALEXANDER RUSSELL SIMPSON, KT., M.D., D.SC.(HON. CAUSA), LL.D.,

EMERITUS PROFESSOR OF MIDWIFERY AND THE DISEASES OF WOMEN AND CHILDREN IN THE UNIVERSITY OF EDINBURGH.

THE hand of death has removed another of the band of professors who in Edinburgh University in the fourth quarter of the last century made its medical teaching known and respected all over the world. Sir Alexander Simpson has not long survived his friend and colleague Sir William Turner; indeed it is not more than six weeks since Sir Alexander published in this JOURNAL (p. 330) some most interesting reminiscences of the late Principal. A motor accident in the street on the evening of April 6th has ended in a moment a long and useful life, and brought an added sorrow to the many griefs which are not far from every one in these troublous times. For the place of the Emeritus Professor of Midwifery will not easily be filled in medical, philanthropic and evangelical Edinburgh.

Born in Bathgate, West Lothian, on April 30th, 1835, Alexander R. Simpson was 35 years old when he was elected to succeed his uncle, Sir James Young Simpson, in the Chair of Midwifery in Edinburgh University in 1870. For thirty-five years he not only occupied but conspicuously adorned that high office; and when in 1905 he retired, it was not because of failing powers, but because, to use his own words, "there was always a risk that the ageing incumbent of a chair might become an incubus upon it." His friends did not share his fears, and Sir Alexander might well have continued for at least another five years; but the full ten years of comparative freedom from professional work, which by retiring he thus was able to have at the close of his life, enabled him to do many things which he had been longing to accomplish, including a journey round the world and a survey of the mission field, and must have brought him a great deal of contentment, rounding off a life which had been marvellously complete and well ordered. One sharp grief divided these last ten years into two parts, the death of Lady Simpson in 1911; but Sir Alexander did not falter in his path, although he thenceforth walked alone, and there can be no question that his sorrow drew from him that tenderest of all his medico-evangelical booklets—*The Broken Heart of Jesus.*

The events of the first thirty-five years, before Sir Alexander stood "nel mezzo del cammin' di sua vita" as professor of midwifery in Edinburgh, may be briefly summarized, although they were indeed potent times whose moulding and determining influences ruled all the years which followed. He was educated at Bathgate Academy and at Edinburgh University; and, as the system of medical apprenticeship had not at that time quite died out, he had, as he said in his valedictory address (in 1905), the "singular good fortune to be apprenticed to Professor Goodsir, although the relationship did not help him much in learning to cure disease." But it brought him under the spell of a man of genius "who was a tireless toiler," and when, after graduation (M.D., 1856), his young apprentice came to bid him farewell preparatory to post-graduate study at Berlin and in Montpellier, Goodsir said to him, "Mr. Simpson, see that you go regularly to church every Sunday," and added, with a smile, "there's no better way to learn German." In the years which succeeded, tireless toil, going regularly to church, and the learning of German and of any other language (French, Italian, Dutch) which served to bring obstetrical knowledge to him, all continued to fill Simpson's days to the full. When he returned to Edinburgh he had the privilege of seven years spent as assistant to his uncle, Sir James, who was then at the zenith of his reputation and powers; and the nephew grew quietly into greatness beside that massive figure. There followed five years of private practice in Glasgow, where from "the corner house in Blythswood Square" Alexander Simpson daily, and often nightly too, set out on his errands of healing, and built up such a reputation for himself, and gathered round him so large and influential a *clientèle*, that when in 1870 he stood as candidate for the professorship of midwifery in Edinburgh, his friends in the great city of the west openly said that if he failed to seat himself in the chair in Edinburgh, he had still a feather bed to lie on in Glasgow. There can be no doubt that these five strenuous and independent years did more than anything else could have done for the upbuilding of Sir Alexander Simpson, and sent him through to his heavy duties in the east with a determination and a capacity to overcome obstacles which were the delight of his friends and a surprise to those who were opposed to him. When the great contest and trial of strength were over and Simpson was installed in the chair of midwifery (1870), it stands to his lasting credit that without yielding one essential point he nevertheless steadily drew over to the circle of his friendship many who had been averse to his coming, and did so by the simple, kindly acts of a Christian gentleman, ready to forgive and quick to forget.

For the next thirty-five years (1870–1905) Simpson dominated Edinburgh obstetrics and gynaecology (for at that time the university chair carried with it the appointment to one of the gynaecological wards in the Royal Infirmary). His lectures were always filled with the latest obstetric knowledge of the Continent, and he early recognized the value of the gynaecological work of the Americans; he saw the number of students attending his class rise to little short of 300; he instituted a summer class of operative midwifery and gynaecology, which came to be more and more largely attended; he did his share of the teaching of clinical gynaecology, in association with the Professors of Clinical Medicine in the Royal Infirmary, and his Thursday gynaecological demonstrations were always well attended. He witnessed the birth of abdominal surgery and, indeed, took a great share in it, feeling his way by his operations (ovariotomies and the like) in the Buchanan ward towards the perfected science of the present day, himself reaching an outstanding position as one of the most successful of hysterectomists, and placing the surgeons under a debt of gratitude which many amongst them readily acknowledged. He was on duty for a quarter of each year as physician at the Royal Maternity Hospital (named also, in honour of his uncle, the Simpson Memorial), where he performed the first Porro-Caesarean section in Great Britain; he was swift to apprehend the value of the axis-traction principle introduced by Tarnier of Paris into the construction of the forceps, and through his immediate application thereof to the J. Y. Simpson forceps he carried this great obstetric advance to Austria and to Germany at the same time that he brought it to his own land; the basilyst invented by him is, in the opinion of many to-day, the best known perforator for the head, including the basis cranii, and the basilyst tractor has also much to recommend it. He rarely missed a meeting of the Edinburgh Obstetrical Society, of which he was thrice president, or an opportunity of saying a kind and encouraging and at the same time critical thing of the work of the younger men presented to it. He worked himself and he encouraged his assistants to work; and when the work was done and recognized as good he distributed the praise most generously, keeping little or none for himself. It was a beneficent and a benevolent domination that he exercised over Edinburgh obstetrics for thirty-five years. But he did more: he saw to it that midwifery got and maintained its right and proper and important place in the medical curriculum of the university; he took with him and established on ever surer foundations the reputation of Scottish midwifery across the border, in England, in Europe, in America, and even in far-off Japan; there was hardly an international congress of medicine or of gynaecology at which he did not attend and to whose debates he did not contribute; and he brought back to his Alma Mater and to his class-room and ward the rich spoils of his experience and observation abroad, with the result that many of his colleagues and assistants were early familiar with the best that the Continent and America could give. It was during his visit to the International Medical Congress at Washington in 1887 that he made an important contribution to an attempt to introduce uniformity into the nomenclature of obstetrics, and distributed among the medical men attending the congress copies of the Gospel of Luke and the Acts of the Apostles, printed (without chapters and verses) in the form of a separate work, with the title "Christ and the Beginnings of Christianity, by a Physician of the First Century." One suspects—nay, one is sure—that he enjoyed more fully the giving away of the booklet than the presentation of the uniformity scheme, and he always spoke with supreme satisfaction of the medical men who accepted copies without a suspicion that they

were receiving portions of the sacred scriptures. For some years he was dean of the medical faculty in his own university; he was president of the Royal College of Physicians of Edinburgh, and he was also honorary president of the Glasgow Obstetrical and Gynaecological Society (1896–8). He was an honorary or a corresponding Fellow of many American and Continental societies; Manchester gave him its honorary Doctorate of Science, and his own university added the LL.D.; and, to crown all, he received the honour of knighthood in 1906. He did not perhaps write so much himself on the subjects which he taught as he inspired others to write, but the volume of *Contributions* which he published in 1879 contained not a few outstanding articles, including the learned one on Lahs's theory of flexion in the mechanism of labour. His Harveian address on *Life and its Epiphanies* (1911) was also a notable production.

It has not been possible to speak of his professional life without referring to the religious side of his activities. The two were indeed so intertwined in him as to be inseparable. Their close connexion was equally evident to the students attending his class, to the medical men who came into touch with him, to his colleagues in the university and medical societies, and to his patients and friends. As a consequence he was not only asked to preside over such a medico-religious body as the Edinburgh Medical Missionary Society and came naturally to take a leading part in Professor Henry Drummond's evangelistic campaign among the students, but he was also drawn (always willingly) into all sorts of work in connexion with the United Free Church of Scotland (in kirk session and general assembly), and for many years he directed and presided over the activities of the Carrubber's Close Mission. He also was greatly interested in the temperance cause. (He was returning from a temperance meeting when he was knocked down by a motor car.) Further, his religion was so truly a part of all his work that a unity was produced which was most impressive and convincing.

There are not a few sides of Sir Alexander Simpson's life and work which have not even yet been touched upon. His hospitality, catholic in its extent; his liberality, public and known, but (far more) private and little known; his sympathy with all in distress; his admiration for all things Scottish; his appreciation of the best in literature; his pronounced Liberalism in politics; his keenness (this may be a surprise to some) to bring down a pheasant or a grouse; and his never-failing good humour and friendliness—these are sides of him which need to be held in mind in forming a full and complete picture of the man who used the words, "not in himself a great man, but one who had been a friend of great men," to paint his own likeness. He was a greater man than he was ready to admit.

At the general election in December, 1910, Sir Alexander Simpson unsuccessfully stood for the Universities of Edinburgh and St. Andrews against Sir Robert Finlay. Sir Alexander leaves four sons and a daughter. The eldest son, J. Y. Simpson, is professor of natural science in the New College, Edinburgh; the second, George F. Barbour Simpson, has followed in his father's footsteps and has specialized in obstetrics and gynaecology; a third is a clergyman in Glasgow. Lady Simpson was a daughter of Mr. George Barbour of Bonskeid, Pitlochry, and sister of Dr. Freeland Barbour, P.R.C.P.E.

The funeral, a private one to the Grange Cemetery, Edinburgh, took place on Monday, April 10th; and there was a memorial service in St. George's U.F. Church on Wednesday, April 12th, attended by the Session of St. George's (the late Sir Alexander was the father of the St. George's Session), and such public bodies as the Royal College of Physicians, the University, the Edinburgh Medical Missionary Society, etc.

Sir HALLIDAY CROOM, Professor of Midwifery in the University of Edinburgh, writes:

We who remember Sir Alexander Simpson's appointment to the Chair of Midwifery in the University of Edinburgh will recall that his position was an extremely delicate and difficult one. He was overshadowed by the fame of his illustrious predecessor. His sureness of perception and infinite tact, combined with his abounding kindliness, carried him triumphantly through that anxious and somewhat disquieting period. To those of us who were associated with him at that time his modest conduct and his immediate and courageous application to the work of his chair will always remain a delightful memory. His subsequent distinguished career amply justified his selection by the patrons.

During the long period of his incumbency of the Chair of Midwifery he took an active and lively interest in all departments of academic work. He was a careful, conscientious, and interesting teacher. His lectures were most comprehensive, with perhaps too great a wealth of detail.

On first assuming charge of the gynaecological wards in the Royal Infirmary, coming as he did from Glasgow, where gynaecological operative work was not then a feature, he at that time fought rather shy of the major operations, then practically monopolized by Keith. Before long, however, his ward was filled with abdominal work, which in those days was in its comparative infancy. As time went on his keenness for operating grew apace. His methods grew more and more exact; he was deft and quick with his fingers, rapid and meticulously careful in his technique—as his assistants knew full well—the result being that ultimately he had very few equals, and certainly no superior, in operating. After his frequent spring visits to France and Germany he came back full of fresh ideas and methods, and those were promptly put in practice in his ward. He was a constant student, and scarcely any of the advances in operative gynaecology missed his notice.

He took the deepest and most profound interest in students, not only in their professional work but in their religious life, in which his personality played a prominent part. In all movements for the benefit of students' higher life he took a foremost part, and many mature men of the present day can bear witness to the influence he had upon their lives. This was never better shown than in the interesting time of Henry Drummond's work among the university students, into which he threw himself with characteristic ardour. He was a man of very broad sympathies and wide benevolence, and he contributed handsomely to most of the philanthropic institutions in the city, and to those who appealed to him personally for help he was most open-handed.

Nothing was more delightful than to see him at foreign congresses, most of which he attended, from Moscow to Washington. He was then in his element, whether it were mounting the rostrum beside the president or in the midst of a festive luncheon or dinner party. Everybody knew him and he knew everybody. His name, indeed, was a household word at every congress. There can be no question that at such gatherings he was a universal favourite, for he had a wonderful geniality and fluency of speech, even in a foreign language. His facility in public speaking was certainly one of his most striking characteristics. He spoke with equal ease and grace in a public meeting, a class-room and a medical or church congress. He was particularly happy in his after-dinner speeches, though he was aided by neither alcohol nor tobacco.

His hospitality was proverbial. At his table were to be found men from all countries. Foreigners made prolonged visits to him, and it is a remarkable fact that no one was more hospitable than he was to Germans, who used to be his frequent guests, and that he met his death by the darkness produced over the city by the fear of Zeppelin raids.

He spent an ideal life. His winter was absorbed in the duties of his university chair, varied by philanthropic and religious work. Immediately the session finished in March he went abroad, either to Italy or France, until the beginning of the summer session in May. During the summer, in order to be in touch with his hospital and university work, he had a house in the neighbourhood of Edinburgh, and every autumn he rented a mansion in the country, where he enjoyed shooting—for he was an excellent shot—and similar sport. Each year, therefore, was completely rounded off in congenial work and healthful recreation.

Simpson was one of the most unobtrusive of men and quite willing to efface himself for the advantage of others, although promptly and ardently resenting any slight offered to the department to which he belonged. He was of an even, calm temperament. His firm and definite religious convictions permeated absolutely his whole life. He had the enviable faculty, due to his wonderful belief, *aequam rebus in arduis servare mentem*. To those of us who knew

him this was not a mere temperament, but a fixed belief in his Christian faith. Those who did not know him well were apt to think that he was somewhat austere and looked on the serious side of life too completely, but those of us who did know him knew very differently. No one was of a more kindly disposition, more disposed to take the charitable view of everything, and more pleased to enter into all the amusements and pleasures of those with whom he associated. This was an exceptionally charming characteristic of his.

During the long period of his connexion with the Obstetrical Society of Edinburgh he was three times its president, and there he ruled supreme. He seldom missed a meeting, and his remarks were always felicitous and peculiarly encouraging to the younger men. His attendance at these meetings was with him a religious duty.

His last appearance as a university professor was when he delivered the Promoter's address at a summer graduation, and a more beautiful, chaste, modest, and interesting piece of personal reminiscence it would be difficult to imagine.

Although, when he resigned his charge, he was over 70 years of age, he remained till his death in spirit, temper, and habit, one of the youngest and most active of men, and, indulging his great love of travelling, paid a visit to India.

He had a most comprehensive knowledge of the literature of obstetrics and gynaecology, and was deeply read in all departments of their science and art. He could, with the greatest ease and shortest notice, give references to the most abstruse and out of the way matters. He was an omnivorous reader and a close student, but unlike most, he had no favourite chair in which he sat, nor any favourite desk at which he wrote, nor any favourite room. His powers of application were such that he could read and write anywhere and at any time. It will always be a matter for regret that with his exceptional acquaintance with the literature and practice of his art, he did not produce a textbook, because such a volume produced in his fascinating and attractive style would have been a permanent asset. But he, like his great predecessor, did not care for the drudgery of that work, and his writings are, therefore, to be found scattered in various journals, and the papers he has left us are models of what such papers ought to be—concise, clear, and scrupulously accurate.

Sir JAMES AFFLECK writes:

It is hard indeed to realize that that bright and kindly spirit, with whom I had been holding friendly converse a few hours before, should have been so swiftly and tragically snatched away. Despite his 80 years, "his eye was not dim nor his natural force abated" in any direction (save for the infirmity of deafness), and he looked and walked as if there might yet be many more years in store for him.

It will fall to others to refer more specially to his professional merits which gained for him such an eminent position in his own department, as well as to his intellectual gifts and accomplishments. Relinquishing professional work at the age of 70, when he was admittedly at his best, his interest in medical science and progress never waned, but was keen to the last, while his activities in the domain of philanthropy and Christian work were unceasing.

His was truly a full life, and a fruitful one—fruitful in the many lives made better by his influence, his example, and his constancy; while his sympathies with every cause bearing upon the welfare of humanity found expression alike in his advocacy and his beneficence.

To those who are this day mourning his sudden end it comes as a solace to hear from so many lips the words, "He was a good man if ever there was one," and to feel that this worthy and noble life leaves so fragrant and enduring a memory behind it. Would that there might be an increasing number of such lives in our ranks!

Dr. ROBERT WISE (Stamford Hill, London, N.) writes:

I had the great honour of acting for one year as class assistant to Sir A. R. Simpson in the University of Edinburgh. I shall never forget his great kindness and hospitality. I last met him, hale and hearty, at the Royal Society of Medicine when he read his paper on Jean Astruc. I beg to add my humble tribute of praise to his true goodness and to his greatness as an obstetrician, gynaecologist, and physician.

SIR THOMAS BOOR CROSBY, KT., J.P., LL.D., M.D.ST. AND., F.R.C.S.ENG.

SIR THOMAS BOOR CROSBY, the first doctor of medicine to become Lord Mayor of London, died at the age of 86, on April 7th, at his residence in Gordon Square, after a short illness.

He was the son of a Lincolnshire farmer, and was born in 1830, at Gosperton, near Spalding. Apprenticed to a local surgeon, as was the rule in those days, he afterwards studied at St. Thomas's Hospital, and took the diplomas of M.R.C.S. and L.S.A. in 1852. At St. Thomas's Hospital he filled the appointments of house-surgeon and demonstrator of anatomy. He became F.R.C.S.Eng. in 1860, and two years later M.D. St. Andrews. After leaving the hospital he joined an old-established and very well-known firm of practitioners in Fenchurch Street, E.C., and his connexion with the City of London continued to the end of his long life. He became a member of the Common Council for Langbourn Ward in 1877, and alderman for the same ward in 1898. He was sheriff in 1906–7, and was elected Lord Mayor in 1911. He was then in his 82nd year, and it was noted that he was not only the first doctor of medicine but the oldest citizen to receive that office. His daughter acted as Lady Mayoress, and was associated with him in carrying on the many professional and social duties of the office. His term was distinguished by the assembly of provincial mayors and provosts at very short notice on the occasion of a serious coal strike, and by the raising of £450,000 for the *Titanic* fund. He attended, as Lord Mayor, at the funeral of Lord Lister on February 16th, 1912, at Westminster Abbey, following the pall-bearers in company with the Lord Provost of Edinburgh.

He early became a member of the British Medical Association, and was at one time a member of the Council of the Metropolitan Counties Branch. He showed great interest in the work of the Association in many ways, and it was largely due to him that the then Lord Mayor gave a reception to the members attending the annual meeting in London in 1913. In acknowledging a vote of congratulation from the Council of the Metropolitan Counties Branch on his election as Lord Mayor he said: "I am glad that my appointment to that office is a source of gratification to my medical brethren." There is no doubt that he valued his election largely because it reflected an honour upon his profession. He was at one time president of the Hunterian Society, before which he delivered, in 1871, the annual oration on "Modern Medicine"; he was also a member of the Senate of the University of London. He received several foreign Orders, including that of the Legion of Honour of France, of the Crown of Russia, St. Olaf of Norway, Danebrog of Denmark, and the Rising Sun of Japan.

Sir Thomas Crosby was kindly and courteous. To the last he walked, spoke, and thought like a young man. He ascribed his phenomenal juvenility as an octogenarian to moderation, but also to his custom of ensuring a right amount of sleep. He taught that if a man lost his fair share of slumber one night he should never neglect to make up for it on the next night.

A memorial service was held at All Hallows Church, Lombard Street, on the afternoon of April 11th, when the funeral took place at Kensal Green. The Lord Mayor and Sheriffs attended in state, together with the members of the Court of Aldermen and many members of the City Corporation, including the representatives of Langbourn Ward.

TOM BATES, L.R.C.P., L.R.C.S.ED., M.R.C.S.ENG.,

CONSULTING SURGEON, WORCESTER GENERAL INFIRMARY AND WORCESTER OPHTHALMIC HOSPITAL.

DR. TOM BATES, when just completing fifty years of practice, died of influenza on April 3rd at his old house in Foregate Street, Worcester. He had retired from active practice in 1913 and taken a residence elsewhere, but when his two sons and successors undertook military duties he resumed active work, and unfortunately the inclement weather which prevailed during the last week in March proved fatal to him. Born at March in Cambridgeshire, Dr. Bates received his education in Glasgow and Paris, took the diplomas of L.R.C.P.and S.Ed. in 1866, and that of M.R.C.S.Eng. two years later. He became associated with the eminent surgeon, Mr. Carden, and

later with Dr. Woodward, well known in Worcester. He soon acquired a large practice, solely through ability and force of character, as he was by nature very unassuming. He was not only a dexterous operator but was among the first to understand and practise the treatment by hot water of the commoner gastric disturbances due to errors of diet. For nearly forty years Dr. Bates undertook the only public work which was really to his taste—namely, the honorary surgeoncy of the Worcester General Infirmary, resigning in 1909, when his colleague, Mr. T. P. Gostling, observed that if ever the hospitals came on the rates they would never get such good service as they had received from Dr. Bates. Dr. Bates also held for a very long period the post of honorary surgeon to the Worcester Ophthalmic Hospital. He was a member of the British Medical Association, and when the jubilee meeting was held in Worcester in 1882 he served as secretary to the Section of Obstetric Medicine.

When, at the age of 70, Dr. Bates was about to retire and the infirmary found itself without a house-surgeon, he cheerfully volunteered to do the work, but then his colleagues insisted on sharing the responsibility. A year later he once more assisted the infirmary in the same way. When the war came he undertook, as above noted, his two sons' practice, which, unfortunately, proved too much for his physical powers.

Dr. Bates, a deeply read man, possessed a good knowledge of the French language, and was remarkable for his wit. A good cricketer in his youth, he was also a keen billiard player. He married a Malvern lady, by whom he had four children—two daughters and two sons. Both these sons, Dr. Mark Bates and Dr. Tom Bates, jun., have undertaken military duties. The funeral took place on April 8th at St. Nicholas's Church and Astwood Cemetery, and was attended by numerous members of the profession and patients, and by convalescent soldiers, and nurses from the infirmary.

THE profession in the West of Scotland has suffered severely in recent months by the death of some of its active and well known members, and the name of Dr. WILLIAM GRANT MACPHERSON of Bothwell has now to be added to the list of those who have gone. Carrying on his usual duties till he was taken suddenly ill on the evening of March 29th with what proved to be pneumonia, he passed away during the early hours of March 31st. He was a "son of the manse," his father being the minister of the parish of Canisbay, Caithness, the most northerly parish on the mainland of Scotland. There he received his early education. He entered upon the study of medicine at the University of Edinburgh, where he graduated M.B., C.M. in 1888. In the same year he went as assistant to the late Dr. Bruce Goff of Bothwell, and eventually became a partner in the firm of Goff and Macpherson. His sterling qualities as a man and as a physician were highly appreciated, and he practised his profession with much acceptance. He was greatly beloved by a large circle of patients throughout the Lower Ward of Lanarkshire. He gave much of his time and energy to the promotion of the honour and interests of the profession. Following the example of his late principal, he was an enthusiastic and loyal member of the Association, being at the time of his death a member of the Scottish Committee. He was also Chairman of the Local Medical and Panel Committee and a Member of Council of the Medical and Dental Defence Union of Scotland. In all of these offices his services were highly valued, and he was personally greatly esteemed. His unexpected and comparatively early death has caused pained surprise and sorrow to his friends and colleagues. He leaves a widow to mourn his loss, and for her the deepest sympathy is felt.

THE LATE DR. WILLIAM EVERETT.—Captain J. J. Harper Nelson, I.M.S., writes from India as follows with reference to Dr. Everett, whose death in consequence of the torpedoing of the ss. *Persia* on December 30th, 1915, was noticed in the JOURNAL of January 15th, p. 109:

The manner of his death was tragic, but filled one with admiration. I was a passenger on the *Persia*, and had been allotted a place in his boat in case of necessity. When the torpedo struck the vessel we all gathered opposite our boats. Our boat was the foremost on the port side. The *Persia* heeled over to this side, and as starboard boats could not be lowered women and children were all directed to cross to the port side. Dr. Everett was at his place, and one has a vivid remembrance of his calm bearing under difficult conditions. He was very busy assisting ladies and children to remain upright on the sloping decks. The vessel suddenly rolled over on to its side, and Dr. Everett was unable to get clear of the ship. During the voyage I had got to know him fairly well, and I was impressed with his quiet, dignified bearing, sound professional knowledge, and keen insight into human nature. Men and women were to him not only patients but objects of character study, and his experiences as a ship's surgeon were consequently of absorbing interest. He was an excellent type of ship's surgeon, and his death is much to be lamented.

THE death took place at his residence, Askeaton, co. Limerick, on March 29th, of Dr. P. C. O'BRIEN, resident medical officer of that district. Dr. O'Brien, who was in his 70th year, was for many years medical officer of Askeaton Dispensary District, and his services were greatly appreciated by the public. Some years ago he was appointed a magistrate for the County of Limerick.

DR. G. H. ANDERSON died on April 10th at Loftus-in-Cleveland, after having been associated for over half a century with the district. A native of Aberdeenshire, he was educated at the grammar school in the city of Aberdeen, and graduated M.B. and C.M. of the University in 1865 and M.D. in 1867. He settled at Eston in North-East Yorks, but in 1868 went to Loftus, where he continued in practice down to seven years ago. Dr. Anderson devoted much time to local public affairs and took special interest in sanitary problems, the provision of an isolation hospital in his district being mainly due to his advocacy of an institution of that type.

PROFESSOR GILBERT BALLET, who died on March 17th, was one of the foremost specialists in mental disease in France. He was born at Ambazac (Haute Vienne) on March 29th, 1853. He began the study of medicine at Limoges but soon migrated to Paris, where he became *chef de clinique* under Charcot in 1883. He was appointed physician to the hospitals in 1884, becoming *agrégé* in 1886 and professor in 1907. For two years he lectured on the history of medicine, and in 1909 found his right place in the chair of mental diseases. He was president of the Congress of Alienists and Neurologists of France and French-speaking countries in 1901, and of the French Congress of Medicine. In 1912 he was elected a member of the Academy of Medicine, in the work of which he took a very active part. In 1914 he drew up a scheme of reform of the French lunacy law of 1838, and in 1915 he was reporter of a commission appointed to study the regulation of the sale of alcoholic liquors. Ballet was an ardent advocate of measures for the promotion of temperance. He contributed largely to medical literature. His most important works are lectures on psychoses and nervous affections, and a treatise on mental pathology.

PROFESSOR LÉON LABBÉ, who died recently, was born at Merlerault (Oise) on September 29th, 1832. He graduated at the Paris Faculty in 1861, became *agrégé* in 1863 and surgeon to the hospitals in 1864. For more than thirty years he was one of the leaders of French surgery. Many years ago his name was brought prominently before the public by his successful removal of a fork from the stomach of a man who had swallowed it; the case was known as that of *l'homme à la fourchette*. Labbé was the author, in conjunction with Coyne, of a treatise on benign tumours of the breast and of a number of other writings on surgical subjects. He was a member of the Institute of France and a very active member of the Académie de Médecine. He was a Commander of the Legion of Honour. Labbé retired from professional life in 1905 and entered the French Legislature, becoming Senator for the Orne and President of the General Council of the Department. Among those present at the funeral service, which took place at the Church of Saint Augustin on March 24th, were a number of representative men in science and politics.

Professor Charles Girard of Geneva, one of the leading surgeons of Switzerland, died on March 4th in his 67th year. He was born at Renan in the Val de Travers, and studied medicine at Berne, Tübingen, and Freiburg-im-Breisgau. He took his degree at Berne in 1872. He served during the Franco-Prussian war under Professor Lücke, then professor of clinical surgery at Berne. In 1872 Lücke was appointed head of the surgical clinic at Strassburg and Girard became his chief assistant. That position he held till 1875, when he returned to Berne; he became *privat-docent* in surgery, and in 1904 he was invited to succeed G. Julliard in the chair of clinical surgery at Geneva. He was the author of numerous papers on surgical subjects, and had been elected president of the Société Suisse de Chirurgie on the very day of his death.

Medical News.

The offices of the British Medical Journal and of the Association, including the library, will be closed from Thursday evening, April 20th, to 10 a.m. on Tuesday, April 25th. The library and offices of the Royal Society of Medicine will be closed from Thursday, April 20th, to Tuesday, April 25th, both days inclusive.

Sir Almroth Wright has been elected a foreign associate of the Paris Académie de Médecine.

At the meeting of the Royal Microscopical Society at 20, Hanover Square, W., at 8 p.m., on Wednesday next, Professor Benjamin Moore will read a paper on early stages in the evolution of life.

Dr. Giuseppe Sergi, Professor of Anthropology in the University of Rome, has just completed his seventy-fifth year. In honour of the occasion the Roman Anthropological Society has decided to publish a volume of original memoirs.

Though a large number of soldier patients are receiving free treatment at the brine baths at Droitwich, the arrangements for dealing with ordinary cases are in no wise affected. We are asked to make this statement because it is said that some medical men are under the mistaken impression that the Droitwich baths have been given over entirely to military patients.

A meeting of representatives of public hospitals in London and the provinces and of matrons and nurses was held on April 7th at St. Thomas's Hospital to consider the proposal to found a college of nurses. The Hon. Arthur Stanley, M.P., who was in the chair, said that the answers received from the governors of hospitals and nurses' training schools, and matrons, had convinced the promoters that they were working on the right lines. Several conferences had been held with representatives of societies which advocated State registration, and there was practical agreement that three fundamental principles must be adopted—State registration, a uniform curriculum, and a one-portal examination. It was proposed that the college should have a council of thirty members and a consultative board. The main object of the meeting was to ask those present to ensure that the board was representative of all branches of the nursing profession in Great Britain and Ireland. It was hoped to establish boards in Scotland and Ireland at once. A second meeting will be held next month.

We have received the new number for April of the *Craigleith Hospital Chronicle*. It has, unfortunately, to record the death of Miss Annie Paulin, who had been intimately associated with the hospital since August, 1914, and who was also the first editor of the *Chronicle*. Dr. J. A. MacDougall continues his story of some Scottish regiments, the present instalment dealing with the Cameronians. There are some jokes, but not so many as usual, and a set of excellent verses, "Sworn Brothers All," by Henry Johnstone. We are indebted to Miss M. Anderson of Edinburgh for the gift through the editor of the *Chronicle* of the first two numbers. By this gift the file in the Library of the British Medical Association is completed to date. The *Gazette of the 3rd London General Hospital*, Wandsworth, celebrates the attainment of the age of six months in its number for April. Corporal Irving displays his versatility by imitating Mr. Nevinson, who contributes another excellent futurist drawing, this time "the driver of the ambulance." There are a good many other caricatures and some photographs. The *Norfolk War Hospital Magazine* has made its first appearance this month. The hospital has just celebrated its first birthday, but it occupies a building which has celebrated its centenary, and of this there is a photograph, among other illustrations.

Letters, Notes, and Answers.

The telegraphic addresses of the British Medical Association and Journal are: (1) EDITOR of the British Medical Journal, *Aitiology, Westrand, London;* telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish office of the British Medical Association is 16, South Frederick Street, Dublin.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

M.O. writes: In a munitions factory the employees have to dip their hands in hot water and also in 25 per cent. sulphuric acid, with the effect that the skin becomes cracked in places and red and inflamed in others, while the clothes in contact become ragged and tear readily. Can any treatment for the hands be suggested, and any particular clothing which might be useful?

LETTERS, NOTES, ETC.

Metric Prescribing.

Dr. W. W. Hardwicke (London, S.W.) informs us that the manager of a panel pharmacy recently refused to dispense a metric prescription on the ground that it was "written in French," whereupon Dr. Hardwicke wrote to the Secretary of the London Insurance Committee, who informed him that "a chemist on the panel is required to dispense prescriptions written in metric as well as those in which imperial weights and measures are used." This is, of course, the case. In the *British Pharmacopoeia* for 1914 the metric system is employed for all pharmaceutical and analytical computations, and it is stated in the preface that "the metric system has also been employed for the specification of doses, in the expectation that in the near future the system will be generally adopted by British prescribers. . . . As a transitional provision doses have also been expressed in terms of the imperial system."

Fasting Treatment for Diabetes.

Dr. F. S. Arnold (Berkhamsted) writes with reference to the fasting treatment for diabetes discussed in the Journal of March 25th: The fasting treatment in diabetes is not new, nor was it introduced by Dr. F. M. Allen. It has been practised and ably advocated by Guelpa of Paris for a good many years past. His work, *Autointoxication et Désintoxication*, in which the method is described, appeared in 1910, and my translation of it, bearing the actual title, *Fasting in Diabetes*, was published in 1912, and is now out of print. The "Guelpa method" in the treatment of diabetes has been the subject of many discussions of great interest at the meetings of the great French medical societies; it is fairly widely known, even to the lay public, in this country and in America; and, unless I am mistaken, it has been described and discussed in your columns a good deal further back than two years ago, when, according to the statement in your leading article, the fasting treatment was "introduced" by Dr. F. M. Allen.

Increased Fees.

M.D. writes: Would it not be well if a general notice were issued by the medical profession that medical fees have had to be increased? The reason for the increase is obvious, but the difficulty of the practitioner having to explain to his old patients the enhanced rates would be avoided.

Pain at Root of Neck and Cardiac Irregularity.

Dr. D. Owen Williams (Glandovey) has noted this condition in a woman aged 59. The stethoscope detected marked local pulsation and coupled beats corresponding to the heart sounds. Under appropriate cardiac treatment the pain passed away within four days, the heart sounds becoming normal. The patient had recently been subject to worry, and suffered a few years ago from albuminuria, which had entirely disappeared.

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